



Rocky Flats Environmental Technology Site

Radiological and Non-Radiological Characterization Package for the Building 707 Cluster

November 1999

Revision 0

(Volume 2 of 2)



Best Available Copy

ADMIN RECCRD
B707-A-000003

SURVEY UNIT BREAKDOWN FORM

Building	Survey Area	Survey Unit	Description
707	A (99-0002)	N/A	NE CORNER OF ROOM 200 BUILDING 707 2ND FLOOR
707	B (99-0002)	N/A	NW CORNER OF ROOM 200 BUILDING 707 2ND FLOOR
707	C (99-0002)	N/A	SE CORNER OF ROOM 200, BUILDING 707, 2 ND FLOOR
707	D (99-0002)	N/A	SW CORNER OF ROOM 200, BUILDING 707, 2 ND FLOOR
707	E (99-0002)	N/A	EAST HALF OF ROOM 210 BUILDING 707 2 ND FLOOR
707	F (99-0002)	N/A	WEST HALF OF ROOM 210 BUILDING 707 2 ND FLOOR
707	G (99-0002)	N/A	NE CORNER OF ROOM 220 BUILDING 707 2 ND FLOOR
707	H (99-0002)	N/A	NW CORNER OF ROOM 220 BUILDING 707 2ND FLOOR
707	I (99-0002)	N/A	SE CORNER OF ROOM 220, BUILDING 707, 2 ND FLOOR
707	J (99-0002)	N/A	SW CORNER OF ROOM 220 BUILDING 707 2 ND FLOOR
707	K (99-0002)	N/A	NORTHERN PORTION OF ROOM 240 BUILDING 707, 2 ND FLOOR
707	L (99-0002)	N/A	SOUTHERN PORTION OF ROOM 240 BUILDING 707 2ND FLOOR
707	M (99-0002)	N/A	MODULE A (ROOM 100) BUILDING 70 / MAIN FLOOR
707	N (99-0002)	N/A	MODULE B (ROOM 105) BUILDING 707 MAIN FLOOR
707	O (99-0002)	N/A	MODULE C (ROOM 110) BUILDING 707 MAIN FLOOR
707	P (99-0002)	N/A	MODULE D (ROOM 115) BUILDING 70/ MAIN FLOOR
707	Q (99-0002)	N/A	MODULE E (ROOM 120) BUILDING 707 MAIN FLOOR
707	R (99-0002)	N/A	MODULE F BUILDING 707 MAIN FLOOR (EXCLUDES ROOMS 125A A25B)
707	S (99-0002)	N/A	MODULE G BUILDING 707 MAIN FLOOR
<i>7</i> 07	T (99-0002)	N/A	MODULE H BUILDING 707 MAIN FLOOR
707	U (99-0002)	N/A	RBA ROOMS 167, 169, 173, 175, 179, 171, 180, 181, 181B, 181A, 181C, 182A 182B 182C 183 184A 184, 185 188 197 194 195 193 196A, 196 OF BUILDING 707 MAIN FLOOR
707	V (99-0002)	N/A	CORRIDORS H J K L S T U V NOR I'H ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY TO CORRIDOR H ROOMS 164 166 170 OF BUILDING 707 MAIN FLOOR
707	W (99-0002)	N/A	CORRIDORS M N P R AND THE SOUTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY EXTENDING TO THE SOUTH END OF BUILDING 707 INCLUDES ROOMS 178 AND 178A
707	X (99-0002)	N/A	MODULES J AND K OF BUILDING 707 EXCLUDING ROOMS 146, 141 AND 142
707	Y (99-0002)	N/A	NON-RADIOLOGICAL ROOMS 150 150A 150B 151A, 151B, 151C 153A 153B 153C 153D 153E 155 155A 157 159A, 159B, 159C 159 161 163 165D 165A 165B 165C 165E 176 174 172 172A 164 162 160A 160 158 156 154, 149 152 AND CORRIDORS EXCLUDING ROOMS 164, 166, 170, 178 AND 178A OF BUILDING 707
707	Z (99-0002)	N/A	EXTERNAL SURFACES/ROOF OF BUILDING 707 (INCLUDING ROOF SECTIONS 1, 2 AND 3)
708/708S	AA (99-0002)	N/A	INTERIOR OF BUILDING 708 AND BUILDING 708S (BREATHING AIR COMPRESSOR ON SKIDS)
708	BB (99-0002)	N/A	EXTERNAL SURFACES/ROOF OF BUILDING 708
731	CC (99-0002)	N/A	INSIDE OF BUILDING 731

Building	Survey Area	Survey Unit	Description
707 EXTERIOR TANKS	DD (99-0002)	N/A	TANKS T-223 (LIQUID NITROGEN), T-16 (DIESEL), T209 THROUGH T221 AND T-284 (HELIUM) T-208 (LIQUID ARGON), T- 206 (CARBON TETRACHLORIDE) T-16 (DIESEL) T-290 (DIESEL), T-324 (DIESEL), T-325 (DIESEL)
711, 711A, 718	EE (99-0002)	N/A	BUILDINGS 711 (COOLING TOWER) 711A (EMERGENCY DIESEL PUMP FOR COOLING TOWER) 718 (COOLING TOWER SERVICE BUIDING)
711	FF (99-0002)	N/A	ROOF/EXTERIOR OF BUILDING 711 (COOLING TOWER)
718	GG (99-0002)	N/A_	ROOF/EXTERIOR OF BUILDING 718
#/b		N. C.	BELLEVIOR OF BUILDING 707T (TOMOGRAPHIC GAMMA
#145215 E		NEX	ANDER PERIOR OF BUILDING 707T (TOMOGRAPHIC GAMMA
731	JJ (99-0002)	N/A	ROOF/EXTERIOR OF BUILDING 731
	(44.00)		STERIOR OF VALVE VALUES AV 007 AND VA 008 WEST OF VALUE TO VALUE T
7.4.2		N 4 1/4 X	OF AND EXTERIOR OF VALVE VALUES VV 007 AND VV 008 ST OF BUILDING 707.
778	A (2000-0002)		BUILDING 778 INTERIOR EAST (NON-RAD)
778	B (2000-0002)		BUILDING 778 INTERIOR WEST (NON-RAD)
778	C (2000-0002)		BUILDING 778 INTERIOR WEST (CA PORTION)
778	D (2000-0002)		BUILDING 778 ROOF/EXTERIOR
732	E (2000-0002)		BUILDING 732 INTERIOR
732	F (2000-0002)		BUILDING 732 EXTERIOR
T707S	G (2000-0002)		BUILDING T707S INTERIOR
T707S	H (2000-0002)		BUILDING T707S EXTERIOR

																															ted										T							
	Confinence	Package closed		Package closed, four not taken, high alpha bkgd	Package closed	Package closed, one sample not taken, no HCA	Package closed, one sample not taken, no HCA	Package closed	Package closed	Package closed, locations inaccessible, no crit drain	Package closed, no paint for 2 samples	Package closed, posted ARA	Package closed	Package closed	Package closed		Package closed, equipment removed from site	Package closed		3 not located	Package closed 711 flooded 718 no paint		Package closed, no paint	Deleted	7000	Package closed no paint	Pototo	Deskere closed	Dackage closed	Package closed	Package closed	Package closed		Package closed no paint	Package closed, locations not accessible	Package closed												
Date Tests	Status	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete												
1,500	Status	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete												
	Remaining	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			0 0					3				0 (0	0
Solomos		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					•		> 0		0		0 0	0	0
1 Solomoo		0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	3	3	3	3	2	1	3	3	8	0	2	2	1	1	0	0	0	0	0	5 0		,					+ > c))	0	0 (0	47
l solumos	Required	0	0	0	0	0	0	_ 0	0	0	0	0	0	4	4	4	4	4	3	3	3	3	3	3	8	0	2	2	-	1	0	9	0	-	0	0	- -					> 0		2	-	0	0	63
0,0,0,0	Remaining	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0		0		,		,) c	> 0	> 0)(0 (0
1 0,0,0,0	Completed	130	130	130	130	140	140	130	130	130	130	130	130	132	130	157	122	122	122	177	128	173	205	159	145	174	63	88	53	82	38	45	08	25	0 0		65		90	212	- G	8 8	} €	- - - -	8	56	- 08	4440
57.07	Required	130	130	130	130	140	140	130	130	130	130	130	130	132	134	157	122	122	122	177	137	173	248	159	145	174	63	66	54	82	44	100	30	30	0 0		32		9	117) \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	200	3 6	0/30	30	02	e	4652
Suprey Ame	par farmo	A	В	ပ	۵	Ш	L	ပ	H	_	ر	ᅩ	_	Σ	z	0	Ы	σ	æ	S		n	^	≯	×	-	Z	*	88	သ	QQ	EE	7-10	55	∓ -	= -	3 3		+		١) 2 2	- - - -	<u></u>	щ	ပ	Ŧ	Totals

ThurstiffAuc Total (demindent) Doct Letto				26				94					135					24			¥	¥	61		3	Ž,		49					554
(manimum tory)						3					14			A. Maria		14					2					٥					13		
Company (company)	02	000	0.1	0.2	04	04	03	90	0.2	03	0.2	03	0.4	03	03	90	0.7	60	0.2	0.5	0.2	02	13	0.5	0 4	ς _Ω	0.8	0.5	90	0.7	90	03	0.5
MUCLEOF (dom/100cm)	0.5	0 0	187	69	80	2.7	82 1	118	4 0	0 1	66	1133	21 4	34	80	102	21.7	2.4	0.5	0.2	13	52 2	91	20	0.4	3.5	43.7	5.0	28	0.4	66	4742	79.4
SURFACE AREA (x100 cm)	9				25				2					0					2					7					7				
MASS (C	6 93		•		7 40				6 50					6 47					5 49					7.8					8 00				
, , , , , , ,	0.076	0 085	0 047	990 0	260 O	0 057	0 041	680 0	0 034	0 042	0 034	0 042	090 0	0 039	0 048	0 081	960 0	0 131	0 034	0 075	0 034	0 039	0 215	0 063	0 044	7900	0 098	0 056	990 0	0 081	990 0	0 034	0 061
ž	0 178	0 145	7 280	2 690	0 126	0 409	12 500	1 800	0 549	0 015	1 370	15 700	2 970	0 474	0 106	1 420	3 020	0 330	0 089	0 025	0 215	8 560	1 490	0 230	0 048	0.399	5 050	0 576	0 311	0 044	1 120	53 400	8 940
NUCLIDE	U-233/234	U-238	Pu-239/240	Am-241	U-233/234	U-238	Pu-239/240	Am-241	U-233/234	U-235	U-238	Pu-239/240	Am-241	U-233/234	U-235	U-238	Pu 239/240	Am-241	U-233/234	U-235	U-238	Pu-239/240	Am-241	U-233/234	U-235	0-238	Pu 239/240	Am-241	U-233/234	U-235	U-238	Pu-239/240	Am-241
SAMPLE ID. SIN ODAT 106 (event #, hottle code)		001 002				002 002					003 002					004 002					005 001					200 900					007 002		
SURVEY ARÉA		Σ	-			Σ					Σ				_	Σ					z					z					z		
DESCRIPTION		red paint	_			red paint	-				red paint					red paint					red paint				,	red paint					red paint		

NTOTAL TRANSCOAMECTORAL	6 43		1377	4426	2 63		3 155
ESTRACTED BOX (Spentrock) (Spentrock) (Spentrock)	03 03 07	03 06 05 3	04 06 05 16 06	02 04 02 33 09	04 03 04 05 04	02 04 03 03	02 03 04 08
NUCLIDE (4pm/100cm)	12 06 44 373 61	17 03 14 16644 2861	02 -01 07 12796	03 03 4089 8 335 9	05 03 15 566 67	05 00 09 1760 235	10 02 14 137 1
SURFACE AREA (x100 cm²)	2	8	4	ဇ	2	ဇ	ဇာ
B) SSW	99 /	691	7 66	90 9	5 89	7 12	741
MDA (pCl/g) MASS (g)	0 040 0 049 0 040 0 040 0 085	0 036 0 079 0 064 0 258 0 211	0 101 0 139 0 112 0 374	0 039 0 085 0 039 0 746 0 194	0 067 0 047 0 066 0 083 0 065	0 032 0 071 0 057 0 064 0 063	0 055 0 038 0 031 0 073 0 141
pok	0 147 0 073 0 513 4 390 0 719	0 227 0 043 0 180 217 000 37 300	0 057 -0 026 0 174 301 000 22 900	0 072 0 011 0 057 912 000 74 900	0 078 0 052 0 230 8 650 1 030	0 096 0 009 0 174 33 400 4 460	0 179 0 028 0 252 25 000 3 340
NUCLIDE	U-233/234 U-235 U-238 Pu-239/240 Am-241	U-233/234 U-235 U-238 Pu-239/240 Am-241	U-233/234 U-235 U-238 Pu-239/240 Am-241	U-233/234 U-235 U 238 Pu-239/240 Am-241	U-233/234 U-235 U-238 Pu-239/240 Am-241	U-233/234 U-235 U-238 D-239/240 Am-241	U-233/234 U-235 U-238 Pu-239/240 Am-241
SAMPLE ID, RIN (00A1196 (event #, bottle code)	008 002	000 005	010 005	11 002	012 002	013 002	014 002
SURVEY	z	0	0	0	0	ď	۵
DESCRIPTION	red paint	red paint	red paint	red/purple paint	red paint	red paint	red paint

•					*		,	ě	
SURVEY	SAMPLE ID; RIN 00A1196 (event #, bottle code)	NUCLÍDE , , , , , , , , , , , , , , , , , , ,	pCVg	MDA (PCC/g)	MASS (a	SUBFACE AREA (x100 cm²)	Nisca. Die (dejintionen)	ESTINATED NDA (dpm/f00cm/)	URANGUM TOTAL TRANSURANGE TOTAL (dpm/100cm/) DCGL w=5000 DCGL w=100
		U-233/234	0 092	960 0	192	3	0.5	0.2	
		U-235	0 0 0 0	820 0			0.1	0.4	
<u>α</u> .	015 002	U-238	0 183	960 0			10	0.2	2
		Pu-239/240	2 530	090 0			14 4	0.3	
		Am-241	0 327	0 115			19	0.7	16
		U-233/234	0 182	090 0	683	3	60	03	
C	016 002	U-238	0.533	0 034			27	000	4
ſ	!	Pu-239/240	1 860	0 085			94	0.4	
		Am-241	0 257	0 058			13	03	11
		U-233/234	0 408	990 0	629	45	13	0.2	
		U-235	0 051	0 046			02	0 1	
ø	17 002	U-238	0 456	8200			15	60	38
		Pu-239/240	2 090	0 072			89	0.2	・ 「
		Am-241	0 238	0 072			0.8	02	8
	:	U-233/234	0 550	0 065	10 38	က	42	0.5	
		U-235	0 044	0 081			03	90	
σ	018 002	U-238	0 307	90 0			24	0.5	
		Pu-239/240	3 570	0 085			27 4	0.7	
		Am-241	0 437	0 054			3.4	0.4	31
		U-233/234	0 756	0 038	10 45	4	4 4	0.2	
ı		U-235	0 028	0 083		•	0.2	0.5	
r	022 002	0.238	0.223	0.038			ا - د ا	20	9
		PU-239/240	2010	8/00			/	0.5	O T
		U-233/234	0.301	0.067	7 43	4	12	03	
		U 235	0 017	0 047	!		0.1	0.2	
Œ	023 002	U 238	0 924	990 0			38	03	5
		Pu-239/240	0 482	0 065			20	03	
		Am-241	060 0	0 081			0.4	03	2
		U-233/234	0 115	960 0	627	3	0.5	0.2	
		U-235	0 025	0 075			0.1	03	
<u>cc</u>	024 002	U-238	0 427	0 061			20	03	3
		Pu-239/240	0 962	0 035			45	0.2	
_		Δm-041	ט טטע	0000			•		· ·

Unidate Date of Transcription (Spentrocen) (Spentrocen) (Spentrocen) (Spentrocen)		256		28			295		34					02			0		-			0		0								10		15
ESTIMATED MDA (dom/100cm)	20	0.0	13	17	60	11	60	60	20	90	0.8	13	14	30	0.1	0.1	0.1	0 1	03	0.0	01	000	0 1	0.1	00	00	00	00	00	0.2	0.2	0.2	0.4	90
(((((((((((((((((((238 5	9 /	242	39	2742	107	86	283	57	25	11	3.5	2 69	10.5	0.2	00	0 1	90	0.1	0.2	0 1	01	0.2	00	0.2	00	0.5	13	0.1	13	03	98	119	35
AMEN (CINE)	-				-					~ -					105					14					10					4				
Ó) ssann	8 46				6 64					7 89					6 55	•				5 53					2 97					941				
MDA (pClg)	680 0	0.048	290 0	0 093	0 061	9200	0 061	0 064	0 138	0 035	0 043	6200	0 082	0 172	290 0	0 047	290 0	090 0	0 231	0 035	9200	0 035	0 078	0 133	0 033	0 041	0 033	990 0	0 074	0 037	0 046	0 037	0 073	0 115
S)rod	12 700	0.518	1 290	0 206	18 600	0 729	0 664	1 920	0 390	0 142	0 064	0 183	3 410	269 0	0 176	0 0 1 7	0 106	0 431	060 0	0 180	0 089	0 167	0 265	0 044	0 306	090 0	0 756	1 980	0 081	0 248	0 051	1 650	2 280	0 661
, NUCLIDE	U-233/234	0-235	Pu-239/240	Am-241	U-233/234	U-235	U-238	Pu-239/240	Am-241	U-233/234	U-235	U-238	Pu-239/240	Am-241	U-233/234	U-235	U-238	Pu-239/240	Am-241	U-233/234	U-235	U-238	Pu-239/240	Am-241	U-233/234	U-235	U-238	Pu-239/240	Am-241	U-233/234	U-235	U-238	Pu-239/240	Am-241
SAMPLE ID, RIN 00A1196 (avent 8, bottle code)		019 000	200 210				020 005					021 002	****				025 002					026 002					030 005					031 002		
SURVEY AREA		U)				S					တ					-				!	_					>					>		
DESCRIPTION		ופתווומוסמוו	•				red paint				accac/pos	red/illancoll		•			red paint					red paint					red paint					tan paınt		

Neugable Fora		17.00 4.00 2.00 2.00 2.00 2.00 2.00 2.00 2		14				20					4					2					9					615				É	208
UBANNALTOTAL TRA (sport 100-m²) Ococ m-5000		18				Control of the Contro	125		300 100		9					2					4					2					3		
ESTRATED NOA	0.7	15	15	16	90	14	90	- 80	90	0.4	03	90	0.4	0.4	03	0.5	0.5	03	90	0.8	90	0.7	90	03	0.2	03	60	12	0.2	0.4	03	03	60
NUCLIDÉ (gpm/100cm)	29	13.5	10 5	36	151	14	108 5	13.0	10	0.2	48	32	90	16	Z 0	3.4	11	0.8	13	-01	3.5	49	60	0.8	0 1	14	505 3	109 9	80	0.1	16	189 4	186
SURFACE AREA (x100 cm)	1				1				3					3					2					က					4				
D) SSVV	7 83				7 88				11 44					2 20					9 12					7 04					998				
MDA (pC//g)	0 041	0 084	0 085	0 093	0 037	0 081	0 037	0.048	0 068	0 047	0 038	0 071	0 051	0 071	0 049	0 083	0 090	0 049	0 064	0 079	0.064	0 0 0 0	1900	0 061	0 043	0 061	0 182	0 231	0 039	0 086	0 069	0 062	0 195
Bygod \	0 165	0 778	0 604	0 206	0 865	0 078	6200	0.754	0 122	0 0 18	0 566	0 381	0 075	0 274	0 036	0 589	0 195	0 146	0 129	-0 007	0315	0 488	060.0	0 160	0 0 16	0 261	97 000	21 100	0 160	0 029	0 341	39 400	3 860
* * * * * * * * * * * * * * * * * * *	U-233/234 U-235	U-238	Pu-239/240	Am-241	U-233/234	U-235	U-238	P.U-239/240	U-233/234	U-235	U-238	Pu-239/240	Am-241	U-233/234	U-235	U-238	Pu-239/240	Am-241	U-233/234	U-235	0-238	Pu-239/240	Am-241	U-233/234	U-235	U-238	Pu-239/240	Am-241	U-233/234	U-235	U-238	Pu-239/240	Am-241
SAMPLE ID, BIN 00A1196 (event #, bottle code)		032 002					33 002				027 002					028 002				000	700 670					034 002					035 002		
SURVEY		>					>				>					>				-	>				;	×					×		
DESCRIPTION		tan paınt					tan paint	**************************************			tan paint					tan paint					tan paint				red/maroon	paint				noorem/per	paint	: : : :	

DESCHIPTION	SURVEY	SAMPLE ID, RIN 00A1196 (event #, bottle code)	NUCLIDE	pcín	ijDA (pCi(g)	MASS (g	SURFACE AREA (K100	NUCLÎNE NUCLÎNE (dom(100cm)	Estranted Mo	University of the Company of Comp	Triansultanic Total (dimitocort) DCGL = -100
			U-233/234	0 154	690 0	8 46	2	14	90		
red/maroon			U-235	0 033	0 044			03	0.4		
paint	×	036 002	U-238	0 198	0 036			19	03	4	
5			Pu-239/240	140 000	0 073		-	1314 7	0.7		
			Am-241	11 700	0 051			109 9	0.5		1425
			U-233/234	0 126	0 034	8 78	4	90	0.2		
			U-235	0 025	0 074		•	0.1	0.4		
red paint	×	037 002	U-238	0 238	0 034		•	12	02	2	
			Pu-239/240	8 130	090 0		•	39 6	03		
			Am-241	1 380	0 203			67	10		46
			U-233/234	0 292	0 071	11 12	2	36	60		
red/maroon			U-235	0 092	0 0 0 0 0 0			11	90		
naint	×	038 002	U-238	1 140	0 040			14 1	0.5	19	
			Pu-239/240	12 600	0 082			155 5	10		
			Am-241	1 940	0 289			239	36		179
			U-233/234	0 179	0 063	7 26	8	14	0.5		
			U 235	0 032	0 044			03	0.4		
red/maroon	×	039 005	U 238	0 160	0 074			13	90	3	
paint			Pu-239/240	14 000	0 067		<u>'</u>	1128	0.5		
			Am-241	2 730	0 294			22 0	24		135
			U-233/234	0 179	0 089	11 09	5	22	11		
			U 235	0 014	0 110			0.2	14		
red paint	×	040 005	U 238	0 327	0 089			40	11	9	
			Pu-239/240	10 600	0 068		•	130 5	0.8		
			Am-241	1 050	0 226			12.9	28		143
			U-233/234	0 156	0 078	6 03	۷	10	0.5		
			U 235	0 082	0 108		•	0.5	0.7		
red/maroon	×	041 002	U 238	0 232	0 087			16	90	3	N. Carlotte
paint			Pu-239/240	55 700	0 039			3728	03		
			Am-241	9 780	0 200			65 5	33		438
			U-233/234	0 214	0 045	8 03	-	38	80		
gray paınt			U-235	0 041	0 055			0.7	10		
& black tar	7	045 002	U-238	0 164	0 044			29	0.8	7	
			Pu-239/240	0 099	060 0			18	16		
			Am-241	0 0 0 9	0 054			1 4	10		3
			U-233/234	0 059	0 040	10 73	7	0.7	0.5		
g tu cu icir			U-235	0 011	0 088			01	10		

ANSURAIGE TOTAL (dpm/100cm) ocal w=100			-					-					0					0					478
Unathing Toron (den/toom) (den/toom)	2					2					_					4					5		
Caramanis Caramanis Caramanis	80	60	0.7	0.2	0.1	0.2	0.1	03	02	03	0.2	02	03	10	14		60	13	90	10	90	80	0.4
NUCLIDE (dpm/100cm)	8 0	12	€0	80	0 0	20	90	9 0	00	0.2	E 0	00	00	22	0.4	17	03	-02	-	03	88	4134	649
SURFACE AREA (x100				9					8.5					3					175				
MASS (c				7 02					13 81					1381					6 08				
MDA (pczig),	0 071	6700	0 058	0 065	0 045	0 076	0 043	0 128	690 0	980 0	690 0	0 043	0 087	860 0	0 135	0 109	0 087	0 125	0 077	0 125	0 076	0 106	0 052
pckg	890 0	0 101	0 021	0 306	0 017	0 272	0 191	0 176	0 000	0 046	960 0	000 0	0 011	0 211	0 038	0 169	0 029	-0 018	0 138	0 036	0 487	53 600	8 410
NUCTIDE *	U-238	Pu-239/240	Am-241	U-233/234	U-235	U-238	Pu-239/240	Am-241	U-233/234	U-235	U-238	Pu-239/240	Am-241	U-233/234	U-235	U-238	Pu-239/240	Am-241	U-233/234	U-235	U-238	Pu-239/240	Am-241
SAMPLE ÍÐ RIN 00A1196 (eyert #, bottle code)	046 002					043 002					044 002					047 002 ^A					042 002		
SURVEY AREA	Z					₹					¥					88					8		
DESCHIPTION	Gray paint & hlack tar	DIACH (B)		İ		gray paint					gray paınt					red paint				gray paint w/	pink tinted	substrate	

^Aconservative estimate of mass, based on highest sample mass in batch 1940

0 0 4425 7 279 7 736 9 100

0 4 294 7 18 9 57 7 5000

MIN MAX MEAN SD DCGL_w=

75

兲

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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002	-	Building 707	
Survey Area· A		Survey Unit N/A	
Initiator/ Date	Release Date	Validation Date	Closure Date
10/25/99	12/2/19	9/ 02/08/00	9/ 42/08/00 9/
<i>// /</i>	10	JA 2/24/00	2/28/00
,			
		, , , , , , , , , , , , , , , , , , , 	

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	0002	Building 707		Type 3	
Survey Area A		Survey Unit N/A	1	Area (m ²) 640	
				ling 707 Area is Ned contamination ar	
Survey Type			Classification		
RLC Survey X	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown X
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	55	45	0	0	55
Building		Туре		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Desc	cription				
Survey Type			Classification		
RLC Survey □	FSS □		Class 1 □ Class		Jnknown □
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
i					
Building		Туре		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Desc	cription				
Survey Type		<u></u>	Classification		
RLC Survey □	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown 🗆
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Туре		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Desc	cription		·		
Survey Type			Classification		
RLC Survey □	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown □
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707								
Survey Area: A	Survey Unit: N/A								
	ST CORNER OF ROOM 200, 2 ND FLOOR OF BUILDING 707 EAST OF COLUMN G-3 BUILDING 707 RADIOLOGICAL MINATION AREAS								
Building Information:									
Survey Type Reconnaissance Level Charac	cterization Survey X Final Status Survey								
Building Type Type 1 🗆 Type 2 🗖 Tyj	pe 3 X								
Classification Class 1 □ Class 2 □ Cla									
Contaminants of Concern Plutonium X U	Jranıum X Other □								
Justification for Classification: N/A									
	der, manlift, scaffolding, and/or remote reach tools and ccess into overhead areas – use caution in overheads								
	to overhead areas may require additional controls ys prior to entry Use caution when working in ents for access to 2 nd floor								
Isolation Controls:									
Level 1 □ Level 2 □ N/A X									
Labeling Requirements: NONE									
Survey Package Implementation:									
- - -									
Survey Poolsage Classics	/ee # KESS Manager Signature Date								
Survey Package Closure:	_								
The state of the s	Δ								
RESS Manager Printed Name Employ	ree # RESS Manager Signature Date								

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002	Building 707		
Survey Area· A	Survey Unit N/A		
Survey Unit Description North East corner of room D-4 and East of Column G-3 Building 707 radiological			

Measurement	Number and Type	Comments
urface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1
leasurements	30 <u>unbiased</u> survey points uniformly distributed throughout the area	SEE NOTE 2
	25 biased survey points at the following locations	SEE NOTE 3 SEE NOTE 4
	- Points around floors adjacent to internally contaminated equipment (where accessible) such as glycol P-traps (plenums), hydraulic pumps, etc	
	- Point near each airlock to the plenums	
	- Near waste drum storage	
	- Other areas of potential concern based on RCT judgement/experience	
	CEILINGS/WALLS > 2 meters	
	30 biased surveys (divided evenly between wall and ceiling when possible) with focus on following areas	
	- Walls behind process lines	
	- Tops/sides of plenums	
	- Stained or discolored areas	
	- Areas around pipe or other penetrations	
	EQUIPMENT	
	45 <u>biased</u> survey points on equipment with one or more samples from	
	- Equipment which has visible leaks or contained spills beneath them	
	- Survey points at exhaust ducts	
	- 5 survey points on top of overhead piping (where locations are accessible)	
	- Other areas of potential concern based on	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: A	Survey Unit N/A

Survey Unit Description: North East corner of room 200, 2nd floor of Building 707 Area is North of Column D-4 and East of Column G-3 Building 707 radiological areas are posted as fixed contamination areas

	Minimum Survey/Sampling Measure	
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters	SEE NOTE 1
_	55 1 m ² surface scans shall be taken at each	SEE NOTE 2
	location identified for surface activity measurements Locations found above the	SEE NOTE 3
	DCGL shall be documented	SEE NOTE 4
	CEILINGS/WALLS > 2 meters	
	NONE	
	EQUIPMENT	
	NONE	
Iedia Samples	NONE	
	(2 nd Floor of 707 does not have painted floors)	
r 1	NOVE	
/olumetric Samples	NONE	
ampies		
sotopic Gamma	NONE	
cans		

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: A	Survey Unit N/A

Survey Unit Description: North East corner of room 200, 2nd floor of Building 707 Area is North of Column D-4 and East of Column G-3 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area· A	Survey Unit N/A

Survey Unit Description. North East corner of room 200, 2nd floor of Building 707 Area is North of Column D-4 and East of Column G-3 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected.
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
 - Building number
 - Geographical direction (e.g., indicate which direction is North)
 - Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0002		Building 707				
Survey Area	. A	Survey Unit N/A				
Change #	Description		Initiator/ Date	PRE		
1	Added page GA		1 12/21/99	ABS		
	Deleted her to dike	ct scan beta meas	19/12/2/49	MIS		
2	Replaced page 6 to be		01/06/00	MASS		
3	Added Revised Da GA		01/06/00	ARS		
4	Added Revised po GA Added PEUBED po 9 and ne with improved maps Added pa 9K (follow-up	SUBVEY DATA W pas 9A theu 9J	02/08/00	DOM		
-	with improved maps	, 1	<u> </u>			
5	Added pg 9K (follow-up	o surveys/maps)	1 03/09/00	EDM		
	,0		<i>(1)</i>			

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Survey Area: A	Survey Unit N/A					
	Area: A Survey Unit N/A					
Survey Type: Reconnaissance Level Characterization	Survey X Final Status Sur	vey □				
All Documentation Reviewed for Completion	RCT Supervisor	PRE				
Scan Surveys	,}	9/				
Total Activity Surveys	S	(9)				
Exposure Rate Surveys	N/A	WNA				
Removable Surveys	l	ap				
Media Samples	N/A	N/A				
Volumetric Samples	N/A	N/A				
All Surveys and Samples Accounted For	RCT Supervisor	PRE				
Scan Surveys	J	SA				
Total Activity Surveys	Š	6				
Exposure Rate Surveys	N/A	UN/A				
Removable Surveys	1	n				
Media Samples	N/A	N/A				
olumetric Samples	N/A	N/A				
Comments Follow-up survey completed for posting aniteria. (Pg 9K of a	survey point grea	ter than				

20

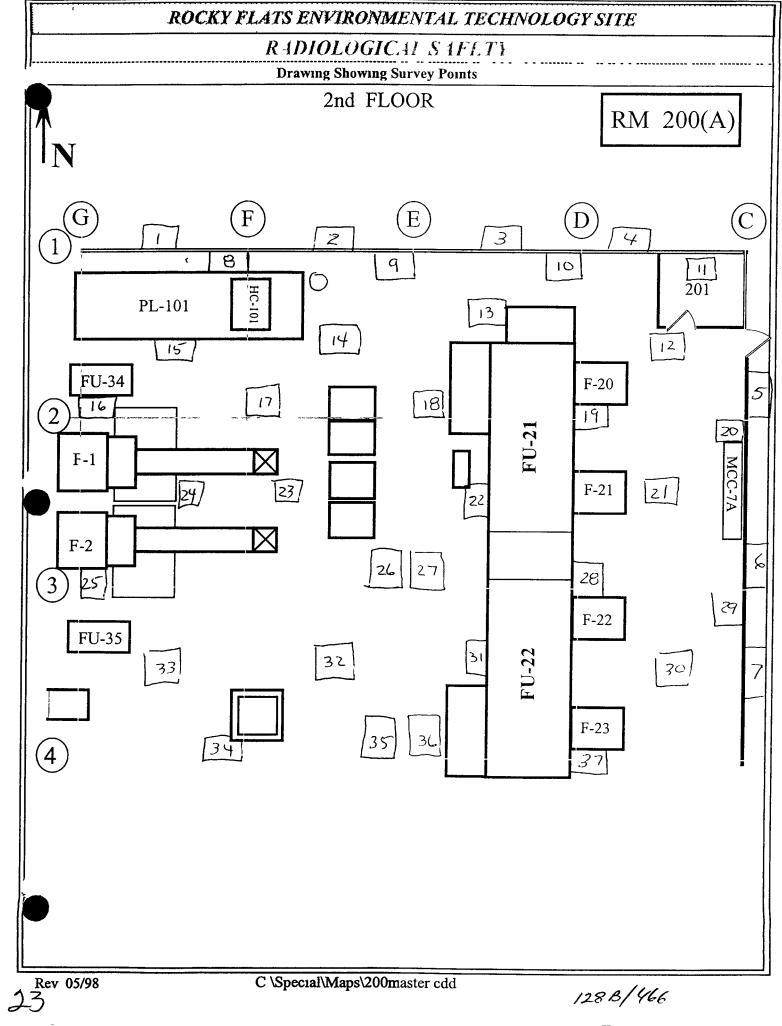
Rev 9/99

		ROCKY FLA	ITS E	NVIR	ONM	ENT	AL TECHNOLOGY SIT	E		
	INSTRUMENT DATA Contemination									
	<u>Eberline</u>	Mfg Eberline		fg NeT		-	vey Type: Contaminatio	<u>n</u>		
	del Sac-4	Model Sac-4	_	odel Elec			ding 707			
	al #_799_	Serial # N		rnal #	-	Loca		Charac		
		Cal Due		ıl Due 😓		Purp	ose Reconnaisance Level	Charac	terizai	lon
_		Bkg		cg <u>zo</u>		DW	7P# 99-707-1204	i		
		Efficiency 33%		ficiency_		0	P# [91-101-1201			
		MEDA		DA <u>42</u> c	2.5 DPM	` Date	e <u>1-10-00</u> Time _	15	00	
Mfg		Mfg Eberline	M		—	/				
		Model BC-4		odel	-/					
		Serial # N/A		rial #/	<u>//n</u>					
1		Cal Due	_	l Due						
		Bkg	_	g Faranau		RCT	-			
MD.	A 99,20Pm		_ MI	ficiency_ DA			Print name / Signatu		/ Emp	·
Com	iments <u>Flo</u>	iors / Wall	5 <	2 me	tecs	<u>. 4</u>	inblased survey poi	<u>nts -</u>	- m2	<u>Scans</u>
In	nin Patsa	<u>nd swipes</u>	>							
	•	etter (IA)	<u> હાલ્</u>	<u>notes</u>	COL	ume	s, Floor Survey	local	hons	Se.
<u>m</u>	IGP									
			Ren	SU)	RVEY Total		T	Ren	novable	Total
Swipe #	Location\Descri (Results in DPM/1	iption 100cm ²)	Alpha	_	Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha	Beta	Alpha
1	<2m-1	16→1F	3	8	28	16	F	0	-24	32
2	22m 1	F→IE	3	20	23	17	F	0	48	14
3	<2m 1	E →1D	0	36	19	18	E	9	-8	14
4	<2m 1	D → 1C	٥	12	32	19	F	0	54	28
5.		(→2(0	-16	14	20	F	0	-12	14
6	<2m 2 <2m 3	<u>C → 3 C</u>	3	40	23	21	F	0	-12	28
7		C-74C	0	4	14	22	F	0	8	14
8	F		C	-8	32	23	F	0	-4	32
9	F		0	12	14	24	F	0	16	23
10	F		3	-20	14	25	F	0	12	38
11.	F		0	-16	32	26	<u>F</u>	0	-40	14
12	F		6	-24	10	27	F	0	68	14
13	F		3	4	42	28	F	0	-16	23
14	F		0	36	5	29	F	0	-24	10
15	F		3	-4	23	30	F	0	12	23
Date	Reviewed:	- <u>24 00</u> RS Su	ıpervis	ion.						

RADIOLOGICAL SALETY

Drawing	Showing	Survey	Points
---------	---------	--------	--------

		Remo	Total	Swipe	Location\Description	Remo		Total	
wipe #	Location\Description (Results in DPM/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
31	F	0	-28	28	61				
32	F	C	-12	5	62				
33	F	C	-20	14	63				
34	F	C	44	32	64				
35	F	0	4	10	65				
36	F	0	52	28	66				
37	F	0	-28	23	67				
38	end of Survey				68				
39					69				
40		<u> </u>			70				
41					71				
42					72			ļ	
43					73				
14_					74				
45					75				
46					76			ļ	ļ
47					77			ļ	
48					75				ļ
49					79				ļ
50					80				ļ
51					81				ļ
52		T			82				ļ
53					83			ļ	
54					84				
55					85				<u> </u>
56					86				
57					87				
16 <u>57</u>					88				
59.					89				-
60.					90.				

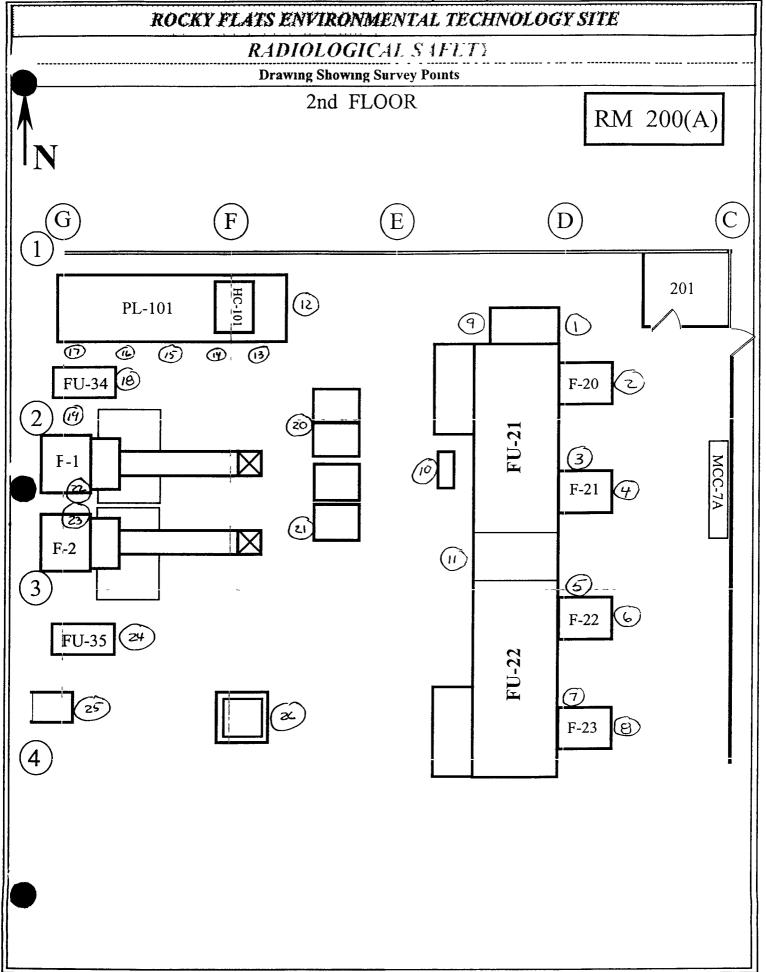


	STRUMENT DATA	A	
(fg <u>Eberline</u>	Mfg Eberline	Mfg NeTech	Survey Type Contamination
Model Sac-4		Model Electra	Building 707
Serial # <u>849</u>		Serial # 1389	Location Rm 200 (A)
Cal Due <u>4-10-00</u>	Cal Due	Cal Due 6-29-00	Purpose Reconnaisance Level Characterization
Bkg <u>0.4 cpm</u>	Bkg	Bkg 10 cpm	
Efficiency 33%	Efficiency 33%	Efficiency 2104%	RWP# 99-707-1204
MDA 148 DPm	MDA	MDA 350 DPm	Det 1 - 14 - 00 Ton 12 - 0
) / f = Pl = 1	3.55 71 1		Date 1-14-00 Type 1300
Mfg Eberline	Mfg Eberline	Mfg	
Model BC-4	Model BC-4	Model	
Senal # <u>872</u>	Serial # N/A	Serial # N/A	
Cal Due 4-12-00	Cal Due	Cal Due	
Bkg <u>52 cpm</u>	Bkg /	Bkg	RCT
Efficiency 25%	Efficiency 25%	Efficiency	Print name / Signature / Emp #
MDA 110,40m		MZDA	Tille liamo / Oighteiro / Emp //
Comments Floo	ors/ Walls	<2 meters	· Blased survey points - Im 2 Sans
— · ·	•		map for locations
	Mill July		map for locations

SURVEY RESULTS

vipe	Loca (Result	ation\Description is in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)		Rem Alpha	ovable Beta	Total Alpha
1	F	Door	0	-20	19	16	F Plenum I)00r	0	-32	5
2.	F	Fan F20	0	4	24	17	F Plenum		0	28	10
3	F	P-trap	0	-40	19	18	F Filter F	434	0	26,	29
4.	F	Fan F-21	0	24	15	19	F Pipes		_3	عا	15
_5	F	Door	0	4	34	20	F Pumps		0	-16	5
6	F	Fan F-27	0	8	5	21	F Pumps		0	-12	10
7	F	P-trap	0	-16	10	22	F Door F		0	ч.	19
8.	E	Fan F-23	0	48	10	23	F Door F	2	6	-4	19
9.	F	Door	0	ماا	5	24	F Filter F	-u 35	3	-24	19
10	F	Pumps	12	4	10	25	F Filter Fl	U 36	0	8	19
11	E	Door	0	4	5	26	F Pumps		3	-20	24
12	F	Ptrap	3	-12	15	27	end of Sur.	u			
<u>13</u>	F	Plenum Doon	0	16	19	28					
4	E	Plenum Doon	0	-20	19	29					
15	F	Plenum Door	3	40	5	30					

Date Reviewed. 1-24 00 RS Supervision



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IN	STRUMENT DATA						
Mfg Eberline	Mfg _ Eberline	Mfg NeTech	Survey Type Contamination				
Model Sac-4	Model Sac-4	Model Electra	Building 707				
Serial #_837_	Serial # 849	Serial # 3215	Location Ryn 200 A				
Cal Due <u>5-17-00</u>	Cal Due 4-10-00	Cal Due <u>7-3-00</u>	Purpose Reconnaisance Level Characterization				
Bkg Oic com	Bkg Orcem	Bkg OO CPM	06 7 7 12 11				
Efficiency 33%	Efficiency 33%	Efficiency 21 01%	RWP# 99-707-1204				
MDA BIZ DPM	MDA 11,5 DPm	MDA 12 9 0Pm	Date 1-17-00 Time 1530				
146 m	3.66 m	> 4C	Date 1-17-00 Time 1550				
Mfg <u>Eberline</u>	Mfg Eberline	Mfg					
Model BC-4	Model BC-4	Model					
Serial #_872_	Serial # <u>833</u>	Serial # N/A					
Cal Due 4-12-00	Cal Due <u>7-14-∞</u>	Cal Due					
Bkg 54 cpm	Bkg <u>53 cpm</u>	Bkg /	RCT				
Efficiency 25%	Efficiency 25%	Efficiency	Print name / Signature / Emp #				
MDA 11230Pm	MDA 111.3	MDA	,				
Comments Each	ipment P	nased sum	very points - I min lats and swipes				
	(9) Area contained (57) → 80) overhedds -						

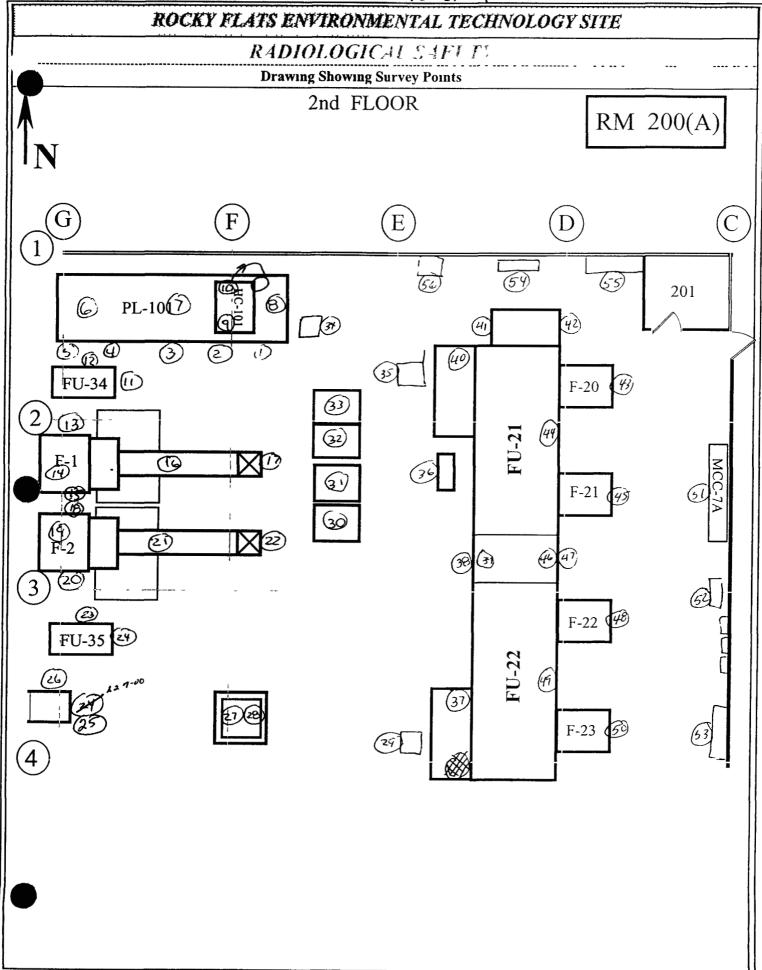
SURVEY RESULTS

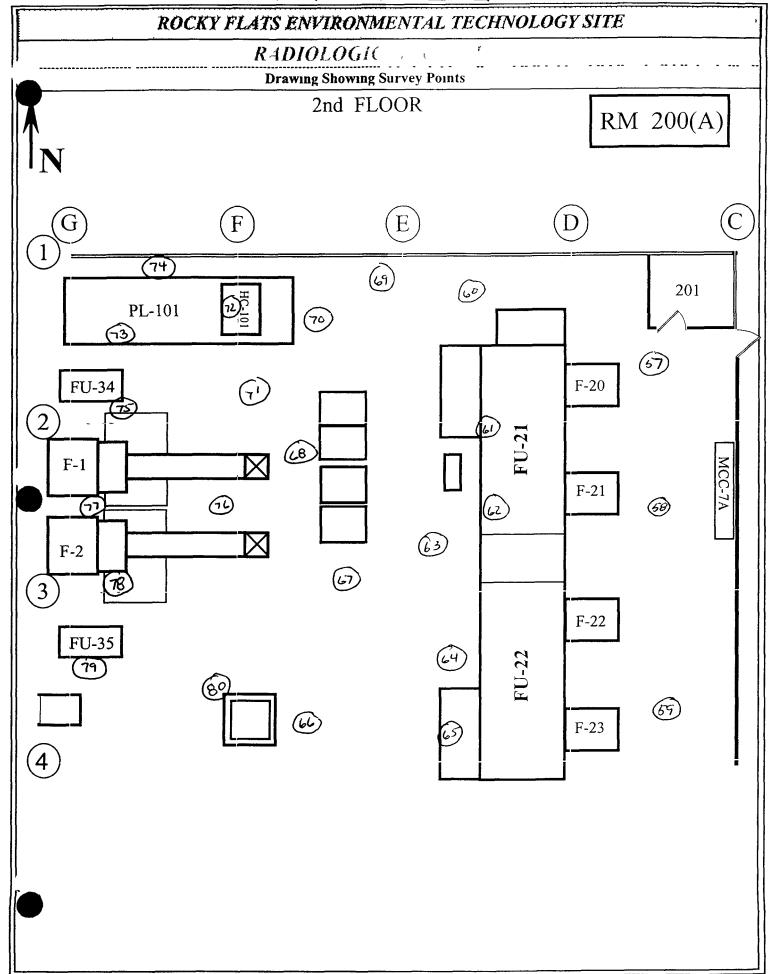
wipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	novable Beta	Total Alpha
1.	Door Plenum (101)	9	8	0	16	Тор	18	16	19
2.	Door Menum	3	58	15	17	Side	0	-24	15
3.	Door Plenum	0	-12	-5	18	Door	0	8	19
4	Door Plenum	0	32	5	19	Top F-Z	0	-8	10
5	Door Plenum	0	-24	10	20	Pipes	0	1Z	19
6.	Top Plenum	0	0	5	21	Top	0	4	10
7	Top Plenum	0	-64	0	22	Side	0	8	15
8.	Top Plenum	0	-16	10	23	Door Fu-35	O	0	10
9	Door Heat Chamber	39	24	404	24	Front Screen	0	-28	24
10	ESPC17700	0	12	5	25	Door Fu-36	3	8	15
11	FU-34	O	-40	-10	26	Front Screen	0	-4	19
12	FU-34	0	-24	0	27	Pump + pipes	0	8	15
13	Prpes	0	48	19	28	Pump + pipes	0	-12	24
14	Top F-1	0	-24	24	29	Central box	.3	-20	5
15	Door	9	-4	10	30	Pump_	0	-64	19

Date Reviewed. 1-2400 RS Supervision:

RADIOLOGICAL SAFETY

Drawing Showing Survey Points											
#ipe	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha		Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha		
31	Pump	0	-28	5	61	Duct	0	-16	5		
32	Pump	0	-24	5	62	Duct	0	-12	25		
33	Pump	3	-16	0	63	Duct	0	-28	5		
34	Cabinet	0	-52	0	64	Pipes	0	4	25		
35	Cabinet	0	4	10	65	Duct	0	40	15		
36	Pump	0	-12	0	66	Duct	0	0	5		
37	Top FLI-22	0	-40	24	67	Duct	0	20	0		
38	Door	0	8	10	68	Elect Box	0	-58	10		
39	Top above door	3	-60	15	69	Pipes	0	-20	5		
40	Top FLI-21	0	-80	0	70	Duct	0	52	10		
41	Door	3	-4	0	71	Duct	0	60	5		
42	Door	0	-40	5	72	Top Heat Chamber	0	17	5		
-13	Fan F-20	0	-40	15	73	Duct	3	-40	5		
44	Top Fu-21	0	-20	15	74	Pipes	0	-12	5		
45	Fan F21	6	-16	24	75	Duct	0	-60	10		
46	Top above door	Ó	-24	19	76	Duct	0	-16	34		
47	Door	3	-8	5	77	Steam Pipe	0	0	5		
48	Fan F-22	3	-36	19	75	Duit	0	8	5		
49	Top FU-22	3	0	5	79	Duct	0	-40	0		
50	Fan F-23	O	-28		80	Duct	0	12	5		
51	Elect Panel	0	-52		81	end of Suracy					
52	Elect Box	0	-36		82	,					
53	Box	0	20		83						
54	Bex	0	28		84						
55	Cabinet	0	0	10	85						
56	Box	0	-40	5	86						
7.	Duct	0	-4	0.5	87						
	PIPES	0	32	5	88						
59	Duct		-44	0	89						
60	Duct	0	-32	10	90						





4								
INSTRUMENT DATA								
Mfg Eberline	Mfg Eberline	Mfg NeTech						
Model Sac-4	Model Sac-4	Model Electra						
Serial # 849	Senal # 837	Serial #_ <i>[233</i>						
Cal Due 4-10-00	Cal Due <u>5-17-00</u>	Cal Due 5-11 00						
Bkg Oll	Bkg	Bkg _O.ダ2						
Efficiency 33%	Efficiency 33%	Efficiency 20,63						
MDA 8, 11.5	MDA 8.2	MDA 45.0						
Mfg Eberline	Mfg _Eberline _	Mfg						
Model BC-4	Model BC-4	Model						
Serial #_833	Serial # 872	Serial #						
Cal Due 7-14 00	Cal Due 4-12-00	Cal Due						
Bkg 46.0	Bkg <u>52.0</u>	Bkg						
Efficiency 25%	Efficiency 25%	Efficiency						
MDA 64.5	MDA //0.4	MDA						

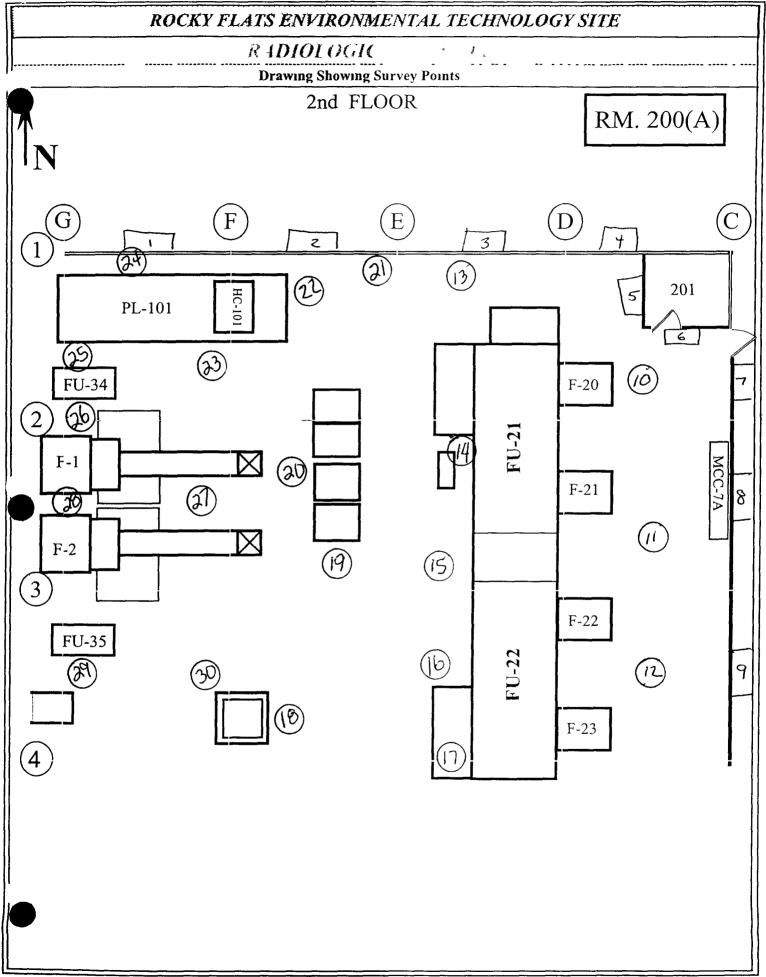
Survey '	Type Contamination
Building	
	Rm 200 (A)
Purpose	Reconnaisance Level Characterization
RWP#	99-707-1204
Data	1-24 - 00 - 7 1/00
	1-24-00 Time 1/00

Comments Ceiling/Walls > 2 meters Brased survey points
I min pats and swipes

SURVEY RESULTS

Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	>2·W	0	48	O	16	C	0.0	-16	-10
2	>2-W	0	-24	15	17	C	0,0	-32	5.0
3	>2-W	0	-20	10	18	C	0.0	-32	0.0
4	72-W	3	0	5	19	<u>C</u>	0.0	-44	0.0
5	>2 -W	0	20	20	20	C	0.0	-32	-5
6	>2-W	O	36	15	21	C	0.0	-32	5
7	>2-W	0	8	SO	22	C	0.0	-28	24
8	>2-W	0	-12	25	23	C	0.0	+16	0.0
9	>2-W	0	-8	29	24	<u>C</u>	0.0	-56	Ţ
10	Ć.	0.0	-80	10	25	C	0.0	51+	10
11	С	0.0	-20	10	26		00	-4	5
12	С	0.0	-4	5	27	C	0.0	+20	10
13	С	0.0	+24	0.0	28	<u></u>	0.0	-44	10
14	C	00	0,0	39	29	<u></u>	0.0	-16	29
15	C	0.0	-16	5	30	<u></u>	0,0	+4	0.0

Date Reviewed 1-24 00 RS Supervision:



Mfg Eberline	STRUMENT DATA Mfg Eberline	Mfg NeTech	Survey Type Contamination				
Model Sac-4	Model Sac-4	Model Electra	Building 707				
Serial # 843	Serial # 837	Serial # 3265	Location HC 101				
Cal Due 4-10-00	Cal Due <u>5-17-0</u> 0	Cal Due 7 3-00	Purpose Reconnaisance Level Characterization				
Bkg 0 3 cpm	Bkg <u>02cpm</u>	Bkg 20-pm	RWP# 00-707-1204				
Efficiency 33%	Efficiency 33%		RWP#				
MDA <u>20 dpn</u>	MDA 20 Hpm	MDA 94 dpm	Date <u>2-8 00</u> Time //30				
Mfg Eberline	Mfg Eberline	Mfg					
Model BC-4	Model BC-4	Model					
Senal #	Serial #	Serial #					
Cal Due	Cal Due NA	Cal Due					
Bkg	Bkg	Bkg	RCT				
Efficiency 25%		Efficiency	Print name / Signature / Emp #				
MDA	MDA	MDA					
Comments Post survey of contained contamination on HC 10, Bypuss Door							

SURVEY RESULTS

IL.	SURVEI RESULTS										
3	Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	ovable Beta	Total Alpha	Swipe	Location\Description (Results in DPM/100cm ²)	Remo	ovable Beta	Total Alpha	
	1	CONTAINED BYPASS	< 20		294	16					
		Botton of Door	<20		<94	17					
		under Bypass	<i>420</i>		294	18					
		Right side of Dour	<20	MA	<94	19					
		Right side of Door	<20		c94	20					
		TOP OF DOOR	<20		<i>-94</i>	21					
	- 1	Left of Door	<20		<94	22					
	8	Left of Door	<20		<94	23					
	9	Crowling IN Front of Door	<20		294	24					
	10	crowing in Front of Door End of Survey				25					
	11	/				26					
L	12					27					
	13					28					
 -	14					29					
	15					30					

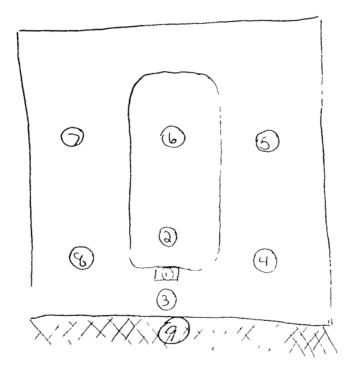
Date Reviewed 2-9-00 RS Supervision

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

PAGI <u>2</u> of <u>2</u>

HC-101



SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002		Building 707						
Survey Area: B		Survey Unit N/A						
Initiator/ Date	Release Date	Validation Date	Closure Date					
m/25/99	9/ 12/2/19	g 02/22/00	2/24/00					
00 ' /	00	<u> </u>	, ,					
		_						
<u></u>								

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	0002	Building 707		Type 3				
Survey Area B		Survey Unit N/A	A Area (m ²) 640					
			200, 2 nd floor of Building 707 Area is North of Column al areas are posted as fixed contamination areas					
Survey Type			Classification					
RLC Survey X	FSS 🗆		Class 1 □ Class	2 □ Class 3 □ U	Jnknown X			
Random/Uniform Surface Activity Measurements	Biased Surface Equipment Surface Activity Activity Measurements Measurements		Media Samples	Volumetric Samples	Surface Activity Scans			
30	55	45	0	0	55			
Building		Туре		Survey Area				
Survey Unit			Area (m²)					
Survey Unit Desc	cription	-						
Survey Type		-	Classification					
RLC Survey □	FSS 🗆		Class 1 Class		Jnknown □			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans			
Building		Туре	Survey Area					
Survey Unit			Area (m²)					
Survey Unit Desc	cription							
Survey Type			Classification					
RLC Survey □	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown □			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans			
Building		Туре		Survey Area				
Survey Unit			Area (m²)					
Survey Unit Desc	ription							
Survey Type			Classification					
RLC Survey □	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown □			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans			

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building. 707
Survey Area: B	Survey Unit. N/A
Survey Unit Description: NORTH WEST CORNER OF ROOM 200, 2 ND FLOOR OF BUILDING 707 AREA IS NORTH OF COLUMN K-4 AND WEST OF COLUMN G-3 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS	
Building Information:	
Survey Type Reconnaissance Level Characterization Survey X Final Status Survey □	
Building Type Type 1 🗆 Type 2 🗖 Type 3 🗙	
Classification Class 1 Class 2 Class 3 Unknown X	
Contaminants of Concern Plutonium X Uranium X Other	
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads	
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads Special security requirements for access to 2 nd floor	
Isolation Controls:	
Level 1 Level 2 N/A X	
Labeling Requirements: NONE	
Survey Package Implementation:	
j	
KESS Manager Printed Name Employee # KES	S Manager Signature Date

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Package ID. 99-00	002	Building 707				
Survey Area. B		Survey Unit N/A				
		n 200, 2 nd floor of Building 707 Area is North of adiological areas are posted as fixed contamination				
	Mınımum Survey/Sampling M	leasurement Requirements				
Measurement	Number and Type	Comments				
Surface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1				
Measurements	30 <u>unbiased</u> survey points uniformly dis	see note 2				
	throughout the area 25 biased survey points at the following	types of SEE NOTE 3				
	areas	SEE NOTE 4				
	- Points around floors adjacent to intercontaminated equipment (where accounts such as glycol P-traps (plenums), his pumps, etc	cessible)				
	- Point(s) near plenum airlocks					
	- Tanks having the potential for being internally contaminated	g				
	- Near waste drum storage areas					
	CEILINGS/WALLS > 2 meters					
	30 <u>biased</u> surveys (divided evenly between and ceiling when possible) with focus or following areas					
	- Walls behind process lines					
	- Tops/sides of plenums					
	- Stained or discolored areas					
	- Areas around pipe or other penetrat					
	- Other areas of potential concern base RCT judgement/experience	sed on				
	EQUIPMENT					
	45 <u>biased</u> survey points on equipment w or more samples from	nth one				
	- Equipment which has visible leaks contained spills beneath them	or				
	- Survey points at exhaust ducts					
	- 5 survey points on top of overhead (where locations are accessible)	piping				
	- Other areas of potential concern bas RCT judgement/experience	sed on				

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Package ID: 99-0002	Building 707			
Survey Area: B	Survey Unit N/A			
Survey Unit Description: North West corner of room 200, 2 nd floor of Building 707 Area is North of				
Column K-4 and West of Column G-3 Ruilding 707	radiological areas are posted as fixed contamination			

	Minimum Survey/Sampling Measure	ement Requirements					
Measurement Number and Type Comments							
Surface Scanning	FLOORS/WALLS < 2 meters	SEE NOTE 1					
	55 1 m ² surface scans shall be taken at each location identified for surface activity	SEE NOTE 2					
	measurements Locations found above the	SEE NOTE 3					
	DCGL shall be documented	SEE NOTE 4					
	CEILINGS/WALLS > 2 meters						
	NONE						
	EQUIPMENT						
	NONE						
Media Samples	NONE						
	(2 nd Floor of 707 does not have painted floors)						
	NOVE						
Volumetric Samples	NONE						
- mirking							
Isotopic Gamma	NONE						
Scans							

Package ID: 99-0002	Building 707
Survey Area: B	Survey Unit N/A

Survey Unit Description: North West corner of room 200, 2nd floor of Building 707 Area is North of Column K-4 and West of Column G-3 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

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Package ID: 99-0002	Building. 707
Survey Area: B	Survey Unit N/A

Survey Unit Description: North West corner of room 200, 2nd floor of Building 707 Area is North of Column K-4 and West of Column G-3 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4- Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

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SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID:	99-0002	Building, 707			
Survey Area.	В	Survey Unit N/A			
Change #	Description		Initiator/ Date	PRE	
	Added page GA		9) 12/21/99	MIZ	
_2	Deleted Ref to di	vect/sew betamen	12/12/19	1188	J 01/0
2	Replaced pg. 6 to dele	ek sper bolamens	Of 0/04/00	MIZZ	
3	Added Revised page		Org 01/04/00	MOS	
4	Pa 9 REPLACED with improv		02/8/00	MIM	
	SURVEY data; Added pages	9 - 4 her 95	0 -		\dashv
]
					\dashv
					_
					-
					-
					-
					_
					_
					_

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID 99-0002	Building 707					
Survey Area: B	Survey Unit N/A	Survey Unit N/A				
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey □						
All Documentation Reviewed for Completion	RCT Supervisor	PRE .				
Scan Surveys	1	\mathcal{A}				
Total Activity Surveys	1	Olan				
Exposure Rate Surveys	N/A	N/A				
Removable Surveys	S	A				
Media Samples	N/A	W _{N/A}				
Volumetric Samples	N/A	N/A				
All Surveys and Samples Accounted For	RCT Supervisor	PRE				
Scan Surveys	1	QA)				
Total Activity Surveys	S	Ch .				
Exposure Rate Surveys	N/A	Un/A				
Removable Surveys	l ~/a y	2/8/00 1/4 00 1/8/00				
Media Samples	N/A	N/A				
Volumetric Samples	N/A	~/A				
Comments		,				

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IN	ISTRUMENT DATA	<u> </u>	O to the second of				
Ifg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination				
Model Sac-4	Model Sac-4	Model Electra	Building 707				
Serial # <u>849</u>	Serial #	Serial # <u>/389</u>	Location Rm 200 (B)				
Cal Due <u>4-10-00</u>	Cal Due	Cal Due <u>6-29-∞</u>	Purpose Reconnaisance Level Characterization				
Bkg 0.4 cpm	Bkg N/A	Bkg 10 cpm	80 33 3 011				
Efficiency 33%	Efficiency 33%	Efficiency 21 04%	RWP# 99-707-1204				
MDA 148 ppm	MDA	MDA 35 DPM	Date 1-14-00 Time 1400				
	- /		Date 1-11-00 11me 1100				
Mfg <u>Eberline</u>	Mfg Eberline	Mfg					
Model BC-4	Model_BC-4	Model					
Serial # 872	Serial #	Serial # N/A					
Cal Due <u>4-12-∞</u>	Cal Due	Cal Due					
Bkg <u>52 cpm</u>	Bkg	Bkg	RCT				
Efficiency 25%	Efficiency 25%	Efficiency	Print name / Signature / Emp #				
MDA 110.40Pm	MDÁ	M2DA	2.3				
Comments Floc	ors/Walls	< 2 meters	unbiased survey points				
			See map for locations				
	etter (IA) d						
		10,100					

SURVEY RESULTS

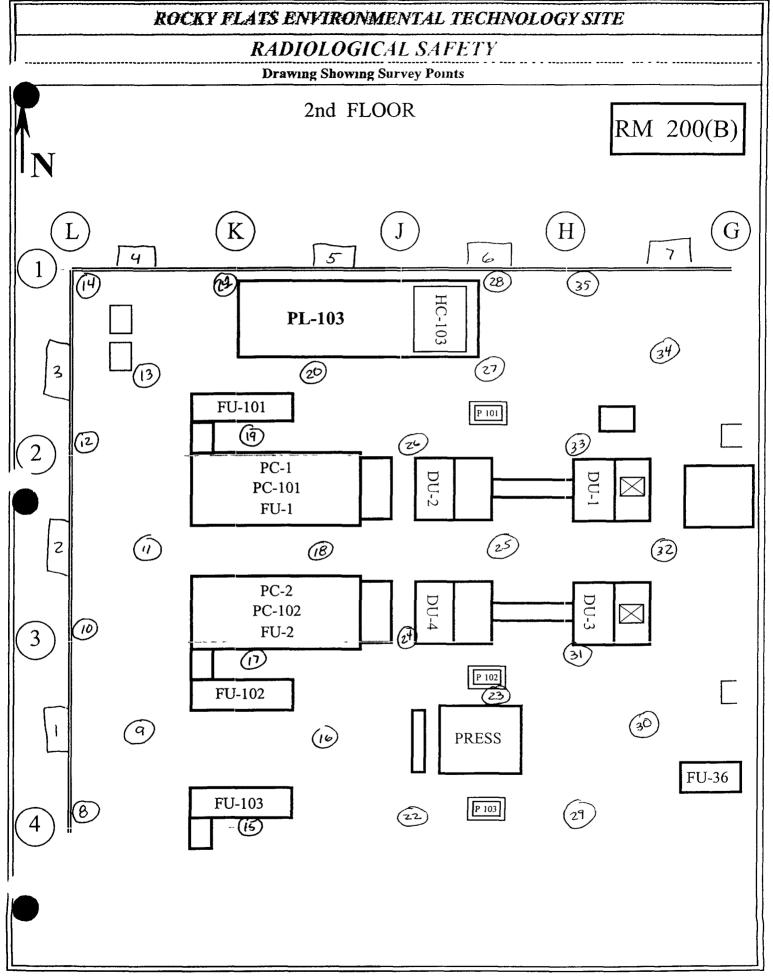
vipe	Location\ (Results in E	Description DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
	<2m	4 L → 3 L	3	-40	5	16	F .	0	-28	5
2	<2m	3 L → Z L	0	-16	0	17	F	0	-58	5
3	<2m	ZL→IL	0	-8	15	18	F	0	-12	20
4	<2m	1L→1K	3	-8	15	19	F	3	-50	0
5	<2m	IK → IJ	0	0	10	20	F	0	20	5
6	<2m	1J → 1H	0	-16	15	21	F	3	-20	0
7	<2m	1H → 1G	0	-24	15	22	F	0	36	0
8	F		0	8	5	23	F	O	-8	15
9	E		0	-20	-10	24	F	3	16	0
10	F		0	-36	0	25	F	0	8	0
11	F		0	-12	24	26	F	O	-4	10
12	F		0	-12	0	27	F	0	0	5
13	F		0	12	0	28	F	0	24	0
4	F		0	16	5	29	F	0	-8	0
_5	F		0	-16	24	30	F	0	24	٥٥

Date Reviewed $\frac{1-2700}{}$ RS Supervision.

RADIOLOGICAL SAFETY

Drawing Sh	wing Surve	y Points
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Vipe	Location\Description (Results in DPM/100cm ²)	Remo	vable	Total	Swipe	Location\Description (Results in DPM/100cm ²)		vable	Total
#		Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
31	F	0	0	0	61				
32	F	0	20	15	62				
33	F	0	-16	0	63				
34	F	0	-24	5	64				
35	F	0	4	20	65				
36	END of Jurvey	_			66		_		
37	/				67		<u> </u>		
38					68				
39					69				
40					70				
41					71				
42					72				
3					73				
4					74				
45					75				
46					76				
47					77				
48					75				
49					79				
50					80				
51					81				
52					82				
53					83				
54					84				
55					85				
56					86				-
7					87				
<u>'</u>					88		1		
59					89		1		
60		1			90				





IN	ISTRUMENT DATA	<u> </u>	
Mfg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination
Model Sac-4	Model Sac-4	Model Electra	Building 707
Serial # 849	Serial # 837	Serial # 1389	Location RM 200 (B)
Cal Due 4-10-00	Cal Due <u>5-17-∞</u>	Cal Due 6-29-00	Purpose Reconnaisance Level Characterization
Bkg Oiscem	Bkg Oilcem	Bkg Oceam	20 7 12011
Efficiency 33%	Efficiency 33%	Efficiency 21.04%	RWP# 99-707-1204
MDA 139 DPm	MDA 11 5 ppm	MDA 129 08m	Date 1-19-00 Time 1500
Mfg Eberline	Mfg Eberline	Mfg	
Model BC-4	Model BC-4	Model	
Serial # <u>BC-833</u>	Serial # BC-872	Serial #/	
Cal Due 7-14-00	Cal Due 4-12-00	Cal Due NA	
Bkg 50cpm	Bkg 57 cpm	Bkg /_	RCT
Efficiency 25%	Efficiency 25%	Efficiency	Print name / Signature / Emp #
MDA 108,4 0Pm	MDA 115 ppm	MDA\	
Comments Equ	upment: B	siased sur	vey point
Imin. pats	and swipe	s. See map	for locations
(47) - (68)	overheads	`	

SURVEY RESULTS

<u> </u>									
νιp ,#	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	novable Beta	Total Alpha
	. E 103 Plenum Door	0	28	1240	16	E FU-101	0	24	190
_2	E 103 Plenum Door	0	-8	10.0	17	€ F-101B	0	-36	140
3	€ 103 Plenum Door	0	-4	0.0	18	E F-101A	3	56	140
4	. E 103 Plenum Door	3	4	190	19	E PHI	0	-12	140
5	€ 103 Plenum Door	0	-/6	380	20	e Fire CAbnet	0	-60	140
6	E Top of 103 Plenum	0	0	140	21	€ PH-2	0	3d - for	50
7	(Center top of Plenum	0	40	19.0	22	E FU-1 Door	0	8	240
8	E Typ HC-103	0	44	5,0	23	c FU-2 Door	0	4	29 C
P	€ Door H(-103	0	-12	100	24	E Humidry Awalizes	0	28	100
11	E Filter ON HC-103	0	-36	40	25	€ DU-2	0	-36	100
11	C P-Trap Interior	6	-48	1090	26	€ DU-4	0	-8	190
12	E Exhaust Fan IIIA	0	-4	100	27	€ PU-3A	0	-40	10.0
13	E condensate Return	0	-32	14.0	28	(PU-2B	3	16	140
14	E Regn INTAKE	0	-96	14.0	29	€ DU-1	0	20	240
15	E Pump P-101	0	-48	100	30	€ DU-3	0	-4	50

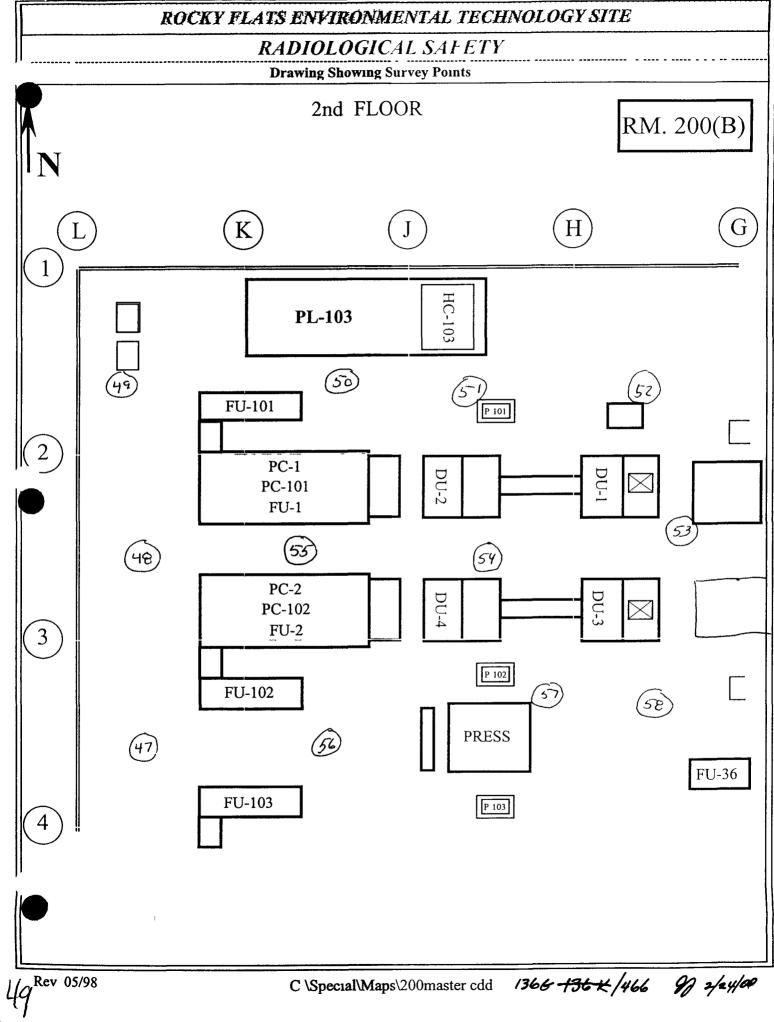
Date Reviewed 1-2700 RS Supervision

RADIOLOGICAL SAFETY

Drawing Showing Survey Points Removable Total Survey Location/Description Removable Total								
pe Location\Description (Results in DPM/100cm ²)	Remo Alpha	vable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha	Beta Beta	Total Alpha
31 E FU-11 Door	0	20	140	61				
32 & FU-12 Door	0	16	140	62				
33 € CU-2	3	-12	j90	63				
34 E Regen R-2 intake	0	20	100	64				
35 E PU-4A+B	0	4	240	65				
36 C P-102	0	-4	100	66				
37 E Hydroform Press Panel	0	-12	00	67				
38 & Press	0	36	00	68				
39 c Press	0	-12	620	69				
40 C P-103	0	-40	50	70			-	
41. E PU-5A+B	0	20	240	71		_		
42. C Reyen R-3, NTWKE	0	-68	190	72				
3 C FU-36	0	-20	00	73				
4. E FU-102	0	-12	240	74				
45 E FU-103 46 -END OF SUTVEY	0	-8	00	75				
46 END OF SURVEY				76				
47 Duct	0	32	0	77				
48 Pipe	0	36	10	75			İ	
49 I-Beam	0	16	24	79				
50 Pipe Heating water	0	56	14	80				
51 Steam line	0	/2	14	81				
51 Steam line 52 Wood decking		-6	0	82				
53 Duct	0	12,	0	83				
54 Duct	0	84	4	84				
55 Wire tray	0	36	4	85				
56 Wire tray	0	108	10	86				
'7 (onduit	0	28	10	87				
Duct 59 Find of survey	3	52	10	88				
59 First of survey				89				
60.				90]

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFET **Drawing Showing Survey Points** 2nd FLOOR RM 200(B) $\left[\mathbf{K} \right]$ H) G (I) 6 PL-103 🗇 6 **(** 3 (16) FU-101 (2 PC-1 PC-101 FU-1 [22] (23 PC-2 PC-102 3 FU-2 國厂 FU-102 RRESS (39 FU-103 4





IN	STRUMENT DATA	<u> </u>				
fg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination			
Wodel Sac-4	Model Sac-4	Model Electra	Building 707			
Serial #_849	Serial # 837	Serial # 1518	Location Rm 200 (B)			
Cal Due <u>4-10-00</u>	Cal Due 5-17-00	Cal Due 6-29-00	Purpose Reconnaisance Level Characterization			
Bkg 0.3 cpm	Bkg Oil com	Bkg 50 cpm	00.707 -1704			
Efficiency 33%	Efficiency 33%	Efficiency 2186%	RWP# 99-707-1204			
MDA 13.9 DPM	MDA 11.5 opm	MDA 60 DPM	Date 1-19-00 Time 1600			
Mfg Eberline	Mfg Eberline	Mfg				
Model BC-4	Model BC-4	Model				
Serial # <u>BC-833</u>	Serial #_BC-872	Serial #				
Cal Due 7-14-00	Cal Due 4-12 60	Cal Due				
Bkg <u>50 cpn</u>	Bkg 57 cpm	Bkg	RCT			
Efficiency 25%	Efficiency 25%	Efficiency	Print name / Signature / Emp #			
MDA 1084 DPm	MDA 115 DPm	MDA	•			
Comments _ Flo	oors / Wall:	o < 2 meter	s Bigsed survey points			
	Im2 Scans, Imin pats and swipes See map for locations					

SURVEY RESULTS

°wipe	Loca (Result	ation\Description s in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
$\bigcup_{1.}$	F.	Transfer Dump	0	-16	19	16	F Filters Fu-102	0	0	28
2	F	Pumps	0	8	19	17	F Filters Fu-102	0	44	23
3	F	Fans	0	<i>ما</i> ا-	14	18	F Filters Fu-103	0	4	10
4	P-	trap (F)	0	-8	23	19	F Filters Fu-103	0	-32	5
5	F	Plenum Door	0	-20	28	20	F Press	0	-24	28
6	F	Plenum Door	0	0	19	21	F Transfer pump	3	-12	5
7	F	Plenum Door	0	-24	19	22	F Pumps - tank	0	16	28
8	F	Plenum Door	0	8	14	23	F Transfer pump	0	0	14
9	FI	Plenum Door	0	0	14	24	F Pumps - tank	0	-28	5
10	F	Filters Fu-101	0	-20	14	25	F Pumps + Tank	3	-32	28
11	F	Filters Fu-101	0	-20	23	26	F Pumps + Tank	3	24	28
12	F	Drain	0	-24	23	27	F Pump-pipes	0	-12	19
13	F	Door	0	-32	14	28	F Pump	3	-12	35
4	F	D00r	0	-32	0	29	F tirexchanger	٥	48	14
3	F	Drain	0	-28	73	20	E Amerdonous	0	0	19

Date Reviewed: 1-27 CO RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points** 2nd FLOOR RM 200(B) G H 4 PL-103 **®** <u>(6)</u> **(e)** FU-101 (12) PC-1 PC-101 FU-1 PC-2 PC-102 FU-2 3 (15 P-102 FU-102 (17)) PRESS FU-36 FU-103 P 103

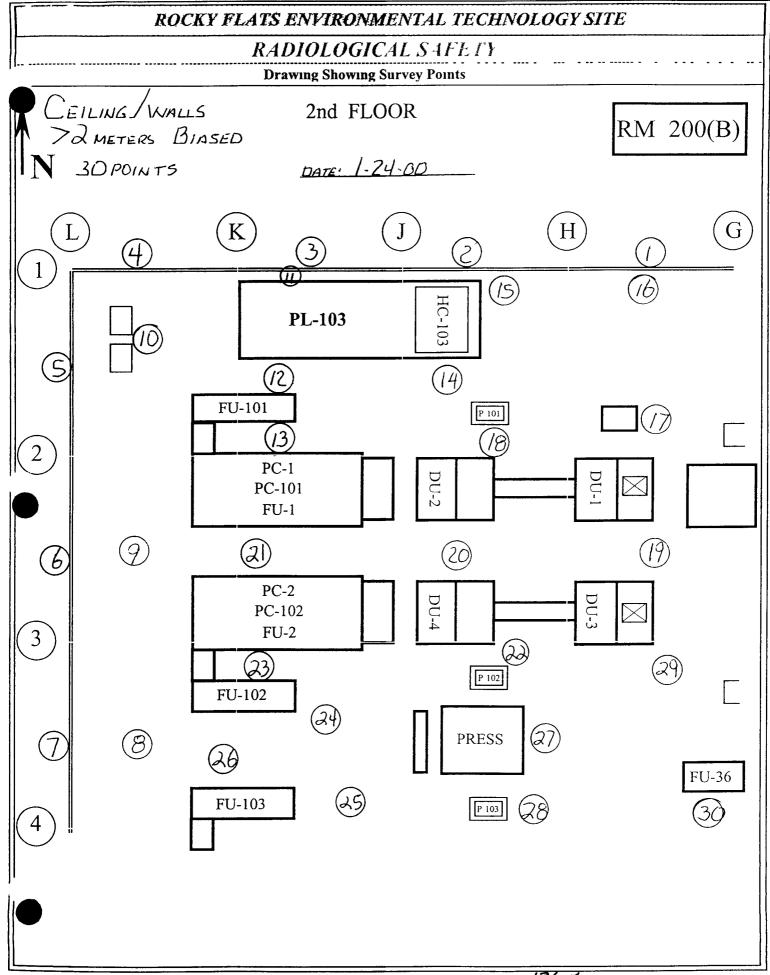


The state of the s			
IN	STRUMENT DATA		
Ifg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination
Model Sac-4	Model Sac-4	Model Electra	Building 707
Serial # 849			Location RM 200 (B)
Cal Due 4-10-00	Cal Due 5-12-00	Cal Due 5-//-OC	Purpose Reconnaisance Level Characterization
Bkg OJCPM	Bkg 🖉 🔿	Bkg OZ	,
Efficiency 33%	Efficiency 33%	Efficiency 20 63	RWP# 99 707-1204
MDA <u>17.5</u>	MDA <u> </u>	MDA <u>45.0</u>	Date 124-00 Time 1530
Mes First	1.66- El 1	3.60	Date / 7 00 Time 1000
Mfg <u>Eberline</u>	Mfg Eberline	Mfg	
Model BC-4	Model <u>BC-4</u>	Model	
Serial # <u>\$ 33</u>	Serial # 872	Serial #	
Cal Due <u>7-74</u> 60	Cal Due 4-12-00	Cal Due	
Bkg <u>460</u>	Bkg <u>52 0</u>	Bkg	
Efficiency 25%	Efficiency 25%	Efficiency	
==	MDA //04	MDA	
Comments <u>CEILI</u>	NGS/WALLS >	PIMETERS: BI	ASED SURVEY POINTS /MIN PATS AND
SWIPES	-/ 		,

SURVEY RESULTS

 									
Cwipe	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
\mathbf{P}_1	ンスル	3	-36	5	16	(0	4	15
2	フレル	3	24	0	17	C	0	-60	10
3	72W	0	-16	19	18	C	0	16	-5
4	ブスル	0	24	0	19	C	3	-8	10
_ 5	>2W	0	-32	5	20	C	0	0	10
6	72W	0	8	-5	21	C	0	20	5
7	72W	3	4	5	22	C	0	16	10
8	72C	3	-20	5	23	<u>C</u>	0	-24	-5
9	C	0	-36	24	24	C	0	40	5
10	C	0	-36	/5	25	(0	-28	39
11	C	0	0	10	26	C	0	-40	10
12	C	0	12	5	27	C	0	4	19
13	<u>C</u>	0	-4	19	28	(0	-40	19
4	C	0	-52	19	29	C	0	-48	15
	C		පි	5	30	C	0	12	15

Date Reviewed 12700 RS Supervision



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SURVEY PACKAGE TRACKING FORM

Package ID 99-0002		Building 707					
Survey Area: C		Survey Unit N/A					
Initiator/ Date	Release Date	Validation Date	Closure Date				
M 10/25/98	M 12/21/99	CA 2/24/00	1/2/28/00				
<i>VII</i>		00 / / 0					
V							
· · · · · · · · · · · · · · · · · · ·							
<u></u>							
		_					
	 						
	 						
		_					

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID. 99-0	0002	Building 707		Type 3			
Survey Area C Survey Unit N/A			Area (m ²) 640				
		t corner of room 20 707 radiological are					
Survey Type		· · · · · · · · · · · · · · · · · · ·	Classification				
RLC Survey X	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
30	55	45	0	0	55		
Building		Туре	1	Survey Area			
Survey Unit			Area (m²)				
Survey Unit Description							
Survey Type			Classification				
RLC Survey □	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре	Survey Area				
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type			Classification				
RLC Survey 🗆	FSS 🗆		Class 1 Class	2 □ Class 3 □ U	Jnknown 🗆		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type			Classification				
RLC Survey □	FSS 🗆		Class 1 □ Class	2 □ Class 3 □ U	Jnknown 🗆		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		



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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building. 707						
Survey Area: C Survey Unit: N/A							
Survey Unit Description: SOUTH EAST CORN 707 AREA IS SOUTH OF COLUMN D-4 AND RADIOLOGICAL AREAS ARE POSTED AS FIXED C	EST DF COLUMN G-5 BUILDING 707						
Building Information:							
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey 🗆						
Building Type Type 1 🗆 Type 2 🗀 Type 3 X							
Classification Class 1 🗆 Class 2 🗖 Class 3 🗎 Un	ıknown X						
Contaminants of Concern Plutonium X Uranium X	Other 🗆						
Justification for Classification: N/A							
Special Support Requirements: Ladder, maning instrumentation may be required for access into							
Special Safety Precautions: Access to overhead Review RWP requirements and surveys prior to overheads. Special security requirements for ac	entry Use caution when working in						
Isolation Controls:							
Level 1 🗆 Level 2 🗖 N/A X							
Labeling Requirements: NONE							
Survey Package Implementation:							

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Package ID: 99-00	002	Building 707				
Survey Area: C		Survey Unit N/A				
Survey Unit Description: South East corner of room Column D-4 and East of Column G-5 Building 707 rareas		oom 200, 2 nd floor of Building 707 Area is South of				
	Minimum Survey/Sampling I	Measurement Requirements				
Measurement	Number and Type	Comments				
Surface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1				
Measurements	30 <u>unbiased</u> survey points uniformly di throughout the area	SEE NOTE 2				
	25 biased survey points at the following	stypes of SEE NOTE 3				
	areas	SEE NOTE 4				
	Points around floors adjacent to in contaminated equipment (where a such as glycol P-traps (plenums), l pumps, etc	ccessible)				
	- Point(s) near plenum airlocks					
	- Tanks having the potential for being internally contaminated	ng				
	- Near waste drum storage areas					
	CEILINGS/WALLS > 2 meters					
	30 biased surveys (divided evenly betwood ceiling when possible) with focus of following areas					
	- Walls behind process lines					
	- Tops/sides of plenums					
	- Stained or discolored areas					
	- Areas around pipe or other penetra	ations				
	- Other areas of potential concern ba RCT judgement/experience	ased on				
	EQUIPMENT					
	45 <u>biased</u> survey points on equipment vor more samples from	vith one				
	Equipment which has visible leaks contained spills beneath them	s or				
	- Survey points at exhaust ducts					
	- 5 survey points on top of overhead (where locations are accessible)	d piping				
	- Other areas of potential concern ba	ased on				

Package ID: 99-00	002	Building. 707			
Survey Area: C		Survey I	Unit N/A		
			floor of Building 707 Area is South of lareas are posted as fixed contamination		
	Mınımum Survey/Sampling	Measurer	ment Requirements		
Measurement	Number and Type		Comments		
Surface Scanning	FLOORS/WALLS < 2 meters		SEE NOTE 1		
_	55 1 m ² surface scans shall be taken at		SEE NOTE 2		
	location identified for non-scan surface measurements Locations found above		SEE NOTE 3		
	DCGL shall be documented		SEE NOTE 4		
	CEILINGS/WALLS > 2 meters				
	NONE				
	EQUIPMENT				
	NONE				
Media Samples	NONE				
•	(2 nd Floor of 707 does not have painted	l floors)			
Volumetric	NONE				
Samples	NONE				
r -					
Isotopic Gamma	NONE				
Scans		;			
		!			

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Package ID: 99-0002Building 707Survey Area: CSurvey Unit: N/A

Survey Unit Description South East corner of room 200, 2nd floor of Building 707 Area is South of Column D-4 and East of Column G-5 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

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Package ID. 99-0002	Building 707
Survey Area. C	Survey Unit N/A

Survey Unit Description: South East corner of room 200, 2nd floor of Building 707 Area is South of Column D-4 and East of Column G-5 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4- Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc)

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SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0002		Building 707	Building 707						
Survey Area:	: C	Survey Unit. N/A	Survey Unit. N/A						
Change #	Description		Initiator/ Date	PRE					
1	Added page GA		12/21/99	MA					
2		t/scan beta meas	12/2/98	MISS					
2	Replaced pa 6 to dele	de soec beta mas	Wan o Jos for	All E					
3	Added Devised pg	eke spec bela mas. 64	Os orlowoo	AB					
4	Replaced pag 9 with po	g 9 theu 95	02/08/0	MILL					
_	to include survey day		W - '						
· · · · · · · · · · · · · · · · · · ·									
<u></u>									
·——									
		_							

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Building 707			
Survey Area: C	Survey Unit N/A	urvey Unit N/A		
Survey Type · Reconnaissance Level Characterization	on Survey X Final Status Sur	vey 🗆		
All Documentation Reviewed for Completion	RCT Supervisor	PRE		
Scan Surveys	S	(A/		
Total Activity Surveys	1			
Exposure Rate Surveys	N/A	WNA		
Removable Surveys	1	QA .		
Media Samples	N/A	W _{N/A}		
Volumetric Samples	N/A	N/A		
All Surveys and Samples Accounted For	RCT Supervisor	PRE		
Scan Surveys	1			
Total Activity Surveys	Š	Was .		
Exposure Rate Surveys	N/A	II/A		
Removable Surveys	S	a		
Media Samples	N/A	UN/A		
Volumetric Samples	N/A N/A	N/A		
Comments				

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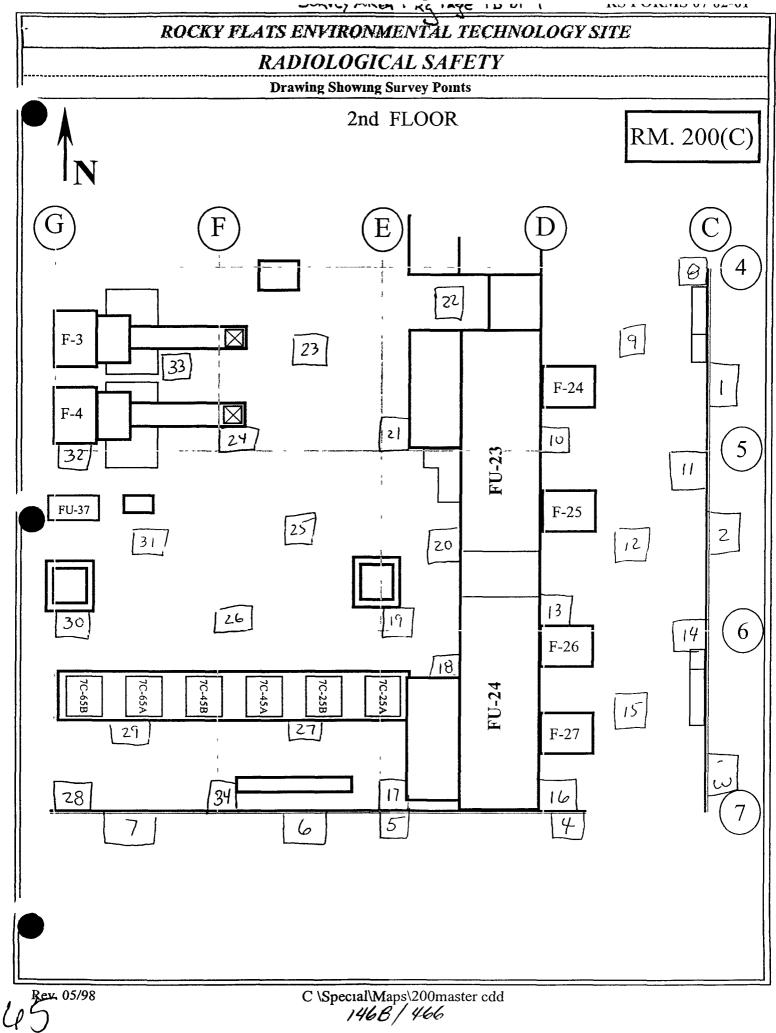
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	ROCKY PLATS ENVIRONMENTAL TECHNOLOGY SITE												
		STRUMENT DA				-1 a	- Contomination	\n					
_	<u>Eberline</u>	Mfg Eberline		Mfg NeTech Model Electra			Survey Type Contamination Building 707						
	lel <u>Sac-4</u> al # 849	Model Sac-4 Serial # 837				Building 707 Location Rm 200 (C)							
		Cal Due 5-17 -0				Purp		Charac	terizat	ıon			
	OIZ cpm	Bkg OO CPY	n Bk	g <u>40</u>	cpm		D" 6C >>> 17	0.041					
	eiency 33%	Efficiency 33%		ficiency		ا د	P# 99-707-12	204					
MD	A 12, 0Pm	MDA B DPm	<u>.</u> Мі	DA <u>57</u>	DPm	Date	e = 1 - 18 - 00 Time	15	30				
Mfg	<u>Eberline</u>	Mfg Eberline	_										
	lel <u>BC-4</u>	Model BC-4	_	odel	1/A					-			
-	al # <u>BC 833</u> Due <u>7-14-00</u>	Serial # <u>BC-87</u> Cal Due <u>4-12-0</u>	-	nal # <u>/</u> l Due /	//								
88	49 cpm	Bkg 53 cpm	-	g		D.C.T	,						
	ciency 25%	Efficiency 25%		iolency		RCI	Print name / Signat	ure	/ Emp				
		MDA III DPm				<u> </u>				2.0			
	ments	100ús / H	Jall	<u> 5 </u>	met	<u>ers '</u>	unbiased survey	point	5 - Im	ころはいろ			
_ <u>_</u>	Number	and swip	pes_	denn	+0	دمان	mes Floor Surc	٠. ١٨٨	c. t. De				
	see map	TEHO: CI	.[3_]	actio		COIG	They I took but to	9 100	12 (10)	15			
				SU	RVEY	RESU	LTS						
Swipe #	Location\Desc (Results in DPM		Ren Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Ren Alpha	novable Beta	Total Alpha			
1	∠ Z (C4 → C5	0	عا	0	16	F	C	-8	19			
2	42 C	£5 → C6	0	8	5	17	F	0	52	10			
3	<2 (6-67	0	32	10	18	[-	3	4	15			
4	42 C	7 -> D7	0	-16	15	19	F	3	0	24			
5	42 E	= 7(NEXT TO)	0	16	10	20	F	3	-52	15			
6	ZZ E	7 → F7	0	24	5	21	Ê	0	-16	29			
7	42 F	7 -> 67	0	44	24	22	F	0	24	19			
8	F		3	28	15	23	F	U	0	19			
9.	F		0	-64	10	24	F	3	-44	24			
10	F		0	28	10	25	F	0	12	24			
11	F		0	20	5	26	F	3	4	10			
12	F		3	-8	15	27	F	0	-28	10			
13	_F		0	16	10	28	F	0	-8	29			
14	F	78 1 3 1 V V V V V V V V V V V V V V V V V	6	84	5	29	E	0	24	5			
15	E		0	8	10	30	F	0	4	10			
l													

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGIC 1L S AFETY **Drawing Showing Survey Points** Removable Removable Total Swipe Location\Description Swipe Location\Description Alpha Beta (Results in DPM/100cm²) Alpha Beta Alpha # (Results in DPM/100cm²) Alpha -24 34. 37. 38. 39. 40. 48. 51. 59. 60.

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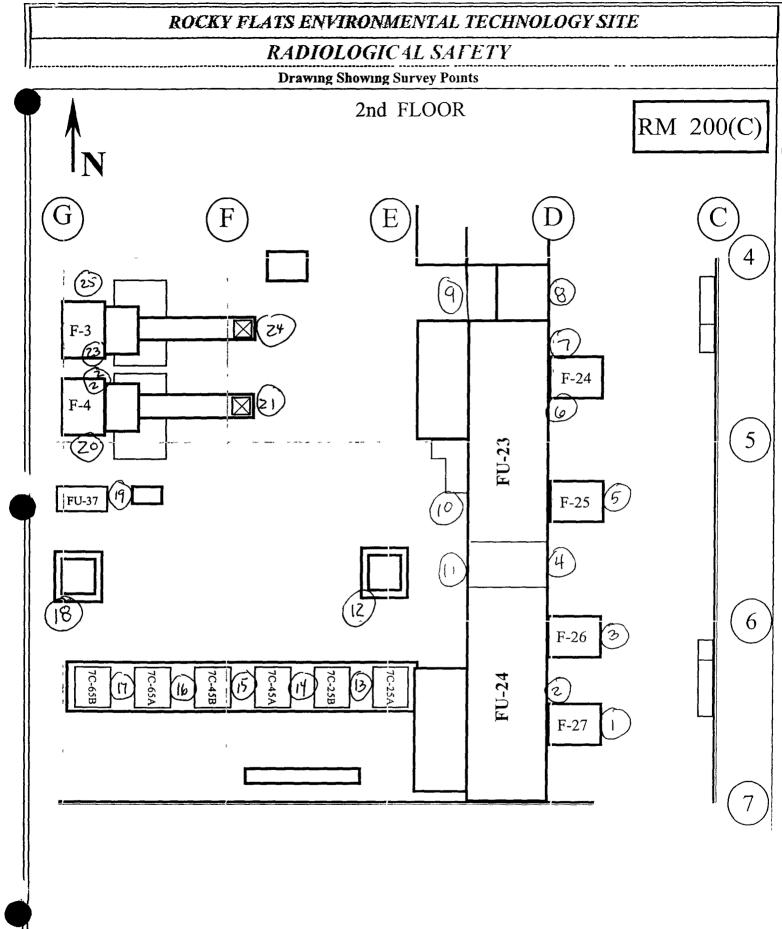


	STRUMENT DATA Mfg Eberline	Mfg NeTech	Survey Type Contamination				
	Model Sac-4		Building 707				
Serial #_ 849	Serial # 937	Serial # 3265	Location RATE Rm ZCO(C)				
Cal Due <u>4-10-∞</u>	Cal Due <u>5-17-∞</u>	Cal Due <u>-7-3-co</u>	Purpose Reconnaisance Level Characterization				
Bkg O.1 cpm Efficiency 33% MDA 11.5 p?m		Efficiency 2101% MDA 12.90Pm					
	- <u>-</u> -		Date $1-29-00$ Time 1500				
·	Serial # 6C-872						
Bkg 46 cpm Efficiency 25% MDA 104.5 0pm	Bkg <u>52 cem</u> Efficiency 25%	Bkg	RCT Print name / Signature / Emp #				
Comments Floor/Walls < 2 meters Biased survey points Im² Scans, Imin pats and suipes. See map for locations							

SURVEY RESULTS

Swipe Location\Description # (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1 F Fan F-27	0	40	O	16	F Pump	0	12	5
2. FP-trap	0	-8	5	17	F Pump	0	-12	15
3 F FAN-F-26	0	-12	19	18	F Pump	0	+16	10
4 F Door	0	-12	10	19	F Fu-37	0	28	10
5 F FAN-F-25	0	-16	10	20	F Pipes	0	-20	1C
6 F FAN-F-24	O	-4	15	21	F Duct	0	-16	5
7 F P-trap	0	20	Ò	22	F Door	0	4	24
8 F Door	3	40	24	23	F Door	9	-48	15
9 F Door	0	-24	0	24	F Duct	0	-3Z	\Diamond
10 F Vent	0	-4	5	25	F Pipes	0	-40	0
11 F Door	0	-40	5	26	end of Suray			
12 F Pump	12	-24	15	27				
13 F Pump	0	84-	19	28				
14 F Pump	0	-40	Ç,	29				
5 F Pump	0	වු	24	30				

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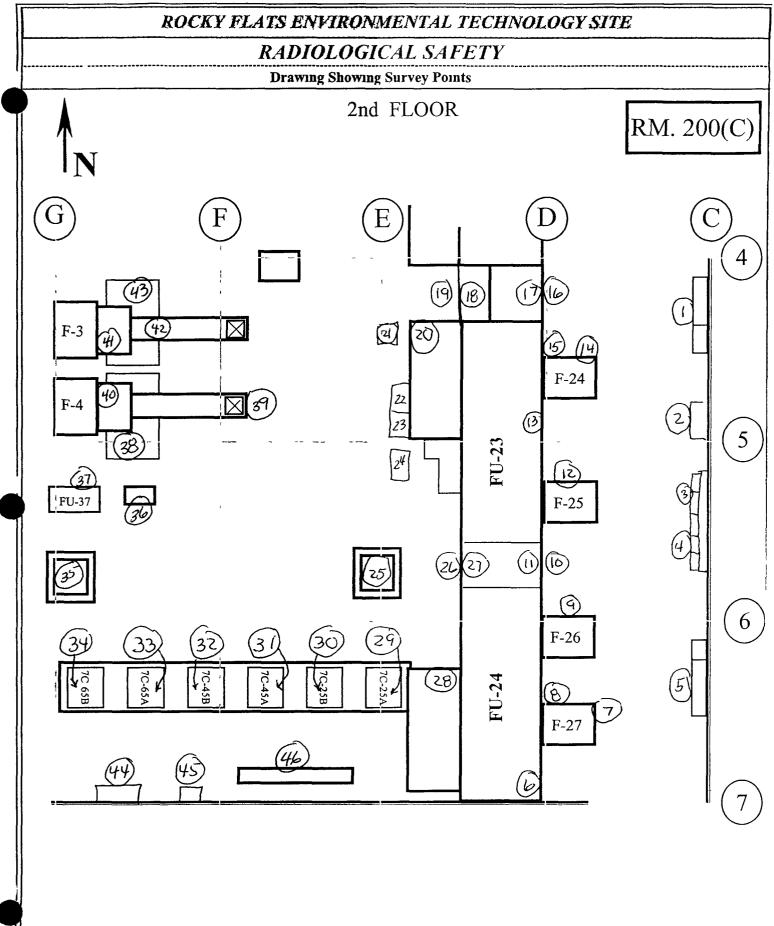
IN	STRUMENT DATA	4								
Mfg Eberline		Mfg NeTech	Survey Type _Contamination							
	Model Sac-4		Building 707							
	Serial # 837		Location Rm 200 (C)							
Cal Due <u>4-10-06</u>	Cal Due <u>5-17-00</u>	Cal Due 7-3-00	Purpose Reconnaisance Level Characterization							
Bkg O.1 Cpm		Bkg o o cpm								
Efficiency 33%		Efficiency 21 01%	RWP# 99-707-1204							
MDA 115 OPm	MDA 82 0Pm	MDA 12.9 DPM								
Mfg Eberline	Mfo Charles	Mfa	Date 1-24-00 Time 1600							
	Mfg Eberline	Mfg								
ModelBC-4_		Model								
Serial # <u>BC-833</u>		Serial # MA								
Cal Due 7-14-00		Cal Due								
Bkg 46 cpm	Bkg 52 com	Bkg	DOT							
Efficiency 25%	Efficiency 25%	Efficiency	RCT							
MDA 10450Pm		MDA	Print name / Signature / Emp #							
Comments East	ioment: Bu	ased surv	bey points Innests and swipes							
See map	for location	^s	The state of the s							
(F) -(58) o		1.3								
	CVIDVICVI DECVI DO									

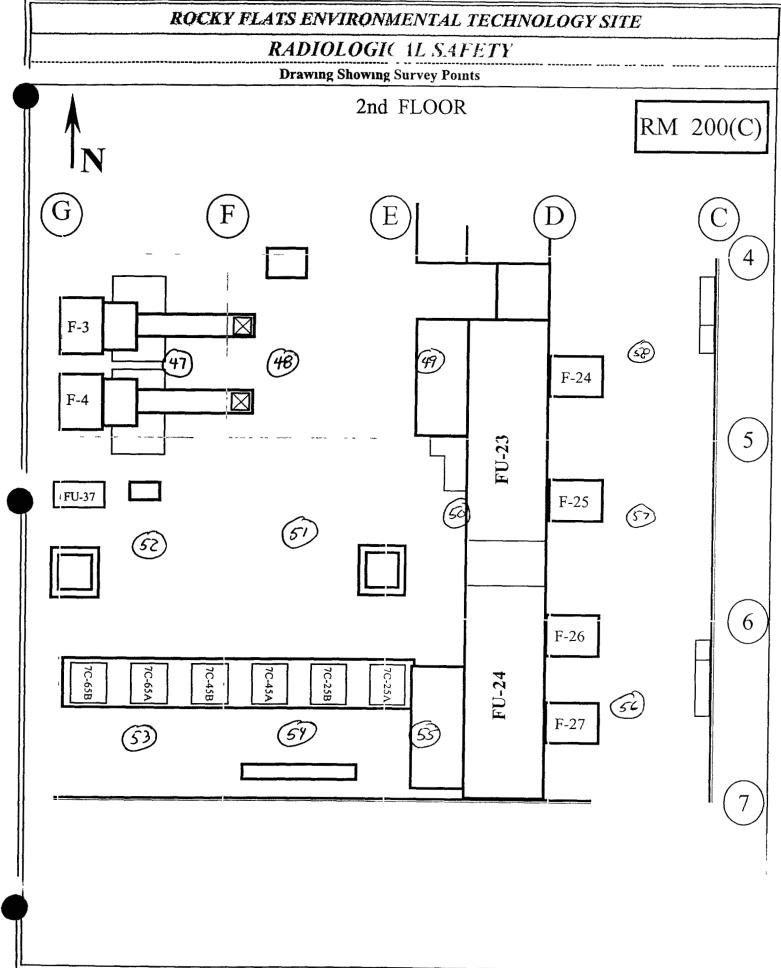
SURVEY RESULTS

Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	novable Beta	Total Alpha
1	Elect panel	U	-16	19	16	Door	0	-16	9
2	Elect box	3	-20	19	17	Tcp	0	-24	15
3	Flect box	0	-20	5	18	Top	0	-4	10
4	Elect box	0	24	10	19	Door	0	16	ZY
5.	Elect panel	0	4	10	20	Top Fu-23	0	-16	5
6	Top Fy 24	3	-40	10	21	Control box	0	-40	15
7	Fan F-27	3	24	10	22	Cabinet	0	- 36	15
8.	P-trap	0	-20	15	23	Cabinet	0	-12	0
9	Fan F-26	0	12	0	24	Cabinet	3	-4	5
10	Door	0	-12	0	25	Pump	0	20	52
11	Top	3	-8	19	26	Door	0	0	10
12	Fan F-25	0	-36	29	27	Top	0	-12	15
13	Top F4-23	0	-4	10	28	Top Fu-24	0	8	5
14	Fan Fer-24	0	24	10	29	Pump	0	12	10
15	P-trap	0	-37	10	20	P.		BI	17

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE												
	RADIOLOGIC 1L SAFETY											
			ng Sho		. — -	Points	Remo	ovable	Total			
Swipe #	(Results in DPM/100cm ²)	Alpha		Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha		Alpha			
31	Pump	0	32	19	61							
32	Pump	0	-40	19	62		-					
33	Pump	0	-32	10	63		ļ					
34	Pump	0	24	10	64		ļ					
35	Pump	0	-36	10	65							
36	Control box	0	0	19	66							
37.	Fu-37	0	8	10	67							
38	Motor	0	<i>3</i> 2	10	68							
39	Duct	0	-ပိ	19	69							
40	Fan F-4	0	4	5	70							
41	Fan F-3	0	44	24	71							
42	Duct	0	-48	15	72							
43	Motor	0	4	19	73							
44	Cabinete	0	-20	5	74							
45	Flect. box	0	-40	0	75							
46	Elect panel	0	-12	Ò	76							
47	Duct'	6	-24	29	77							
48	Duct	<u>ن</u>	36	10	75							
49	Dact	0	-40	10	79							
50	Duct	0	0	10	80	· · · · · · · · · · · · · · · · · · ·						
51	Elect Box	0	10	10	81							
52	Duct	0	80	5	82							
53	Duct	3	12	0	83							
54	Steamline	0	15	0	84							
55	Duct Duct	0	O	0	85							
56	Duct	O	4	10	86							
57	Wire tray	0	4	15	87	The state of the s						
58	Wire tray Conduit	Ċ	56	15	88							
59					89	Nana-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-						
60					90]				





(Survey Area Pkg Page 91 of 9) RS FORMS 07.02-01 ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE **INSTRUMENT DATA** Contamination Survey Type _ Mfg Eberline Mfg NeTech Mfg Eberline Model Sac-4 Building 707 Model Sac-4 Model Electra Rm 200 Serial # /233 Location Serial # 8 49 Serial # 837 Reconnaisance Level Characterization Purpose Cal Due 4-10-00 Cal Due 5-17 00 Cal Due 5-1/-00 Bkg 30 cpm Bkg OO com Bkg OO com RWP# 99-707-1204 Efficiency 63 % Efficiency 33% Efficiency 33% MDA 82 dem MDA 522 sign MDA 8 2 de 1-26-00 Time 1500 Mfg \ Mfg Eberline Mfg Eberline Model BC-4 Model Model BC-4 Serial # 833 Serial # Serial # 872 Cal Due NXA Cal Due 7-14-00 Cal Due 4-12-00 Bkg 43 con Bkg 45 con Bkg Efficiency 25% Efficiency 25% Efficiency **MDA** MDA 1013 dem MDA 103 4 dem Comments Ceilings/Walls >2 meter Biased survey points Imin pats **SURVEY RESULTS**

Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	C	0	200	10	16	>2	0	0	10
2	C	0	8	10	17	>2	0	40	-5
3	C	0	-56	0	18	72	0	0	5
4	С	0	16	١٦	19	С	0	-4	2 9
5	С	0	-12	29	20	> 2	6	24	0
6	C	0	56	0	21	25	0	72	10
7	С	0	0	0	22	>2	0	20	0
8	C	0	4	10	23	<u>C</u>	3	24	-5
9	С	3	28	0	24	C	0	12	15
10	С	3	32	10	25	C	3	56	10
11	С	0	12	15	26	C	0	36	5
12	С	9	32	19	27	C	3	32	0
13	С	3	-8	19	28	С	0	36	15
14	C	3	48	10	29	С	0	4	5
15	C	0	24	15	30	>2	0	28	0

Date Reviewed. 127 60 RS Supervisio

RADIOLOGICAL SAFETY **Drawing Showing Survey Points** 2nd FLOOR RM 200(C) (b) (1) (9) 3 F-3 **(B)** F-24 F-4 5 24) 6 (15) (12) FU-37 F-25 (13) (26) (27) 6 4 F-26 3 (14) 7C-65A 7C-45B 7C-45A 7C-25B **&** F-27 2 29) (19) 30 18 16

SURVEY PACKAGE TRACKING FORM

	Building 707					
	Survey Unit N/A					
Release Date	Validation Date	Closure Date				
() 12/2/199	A) 2/22/00	9/24/00				
	00 / '	00 '				
`						
- 0						
	Release Date	Survey Unit N/A Release Date Validation Date				

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	0002	Building 707		Type 3			
Survey Area D		Survey Unit N/A	\ .	Area (m²) 640			
	5 Building 707 radio	t corner of room 200, logical areas are poste					
Survey Type			Classification				
RLC Survey X	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
30	55	45	0	0	55		
Building		Туре		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Desc	cription	<u></u>		***			
Survey Type			Classification				
RLC Survey □	FSS □		Class 1 □ Class 2 □ Class 3 □ Unknown □				
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре	Survey Area				
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type			Classification				
RLC Survey □	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
	··· —···						
Building		Туре	Survey Area				
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type			Classification				
RLC Survey □	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown 🗆		
Random/Uniform Surface Activity Measurements	Biased Surface Activity	Equipment Surface Activity	Media Samples	Volumetric Samples	Surface Activity Scans		
	Measurements	Measurements					

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707				
Survey Area: D	Survey Unit· N/A				
Survey Unit Description: SOUTH WEST CORNER OF ROOM 200, 2 ND FLOOR OF BUILDING 707 AREA IS SOUTH OF COLUMN K-4 AND WEST OF COLUMN G-5 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS					
Building Information:					
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey				
Building Type Type 1 🗆 Type 2 🗖 Type 3 X					
Classification Class 1 🗆 Class 2 🗆 Class 3 🗆 Un	known X				
Contaminants of Concern Plutonium X Uranium X	Other 🗆				
Justification for Classification: N/A					
Special Support Requirements: Ladder, manli instrumentation may be required for access into	-				
Special Safety Precautions: Access to overhead Review RWP requirements and surveys prior to overheads. Special security requirements for ac	entry Use caution when working in				
Isolation Controls:					
Level 1 🗆 Level 2 🗆 N/A X					
Labeling Requirements: NONE					
Survey Package Implementation:	1				

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Package ID 99-00)02	Building 707
Survey Area D		Survey Unit N/A
	•	n 200, 2 nd floor of Building 707 Area is South of adiological areas are posted as fixed contamination
	Minimum Survey/Sampling N	leasurement Requirements
Measurement	Number and Type	Comments
Surface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1
Measurements	30 <u>unbiased</u> survey points uniformly dis throughout the area	tributed SEE NOTE 2
	25 biased survey points at the following	
	Points around floors adjacent to int contaminated equipment (where ac such as glycol P-traps (plenums), h pumps, etc	cessible)
	- Point(s) near plenum airlocks	
	- Tanks having the potential for bein internally contaminated	g
	- Near waste drum storage areas	
	CEILINGS/WALLS > 2 meters 30 biased surveys (divided evenly between and ceiling when possible) with focus of following areas - Walls behind process lines - Tops/sides of plenums - Stained or discolored areas	
	- Areas around pipe or other penetral	cions
	- Other areas of potential concern ba RCT judgement/experience	sed on
	EQUIPMENT	
	45 biased survey points on equipment wor more samples from	ith one
	- Equipment which has visible leaks contained spills beneath them	or
	- Survey points at exhaust ducts	ļ
	- 5 survey points on top of overhead (where locations are accessible)	piping
	- Other areas of potential concern ba RCT judgement/experience	sed on

Package ID: 99-00	002	Building	; 707			
Survey Area. D	(640 m^2)	Survey Unit N/A				
			d floor of Building 707 Area is South of all areas are posted as fixed contamination			
Minimum Survey/Sampling Measurement Requirements						
Measurement	Number and Type		Comments			
Surface Scanning	FLOORS/WALLS < 2 meters		SEE NOTE 1			
	55 1 m ² surface scans shall be taken at e location identified for surface activity	ach	SEE NOTE 2			
	measurements Locations found above t	he	SEE NOTE 3			
	DCGL shall be documented		SEE NOTE 4			
	CEILINGS/WALLS > 2 meters					
	NONE					
	EQUIPMENT					
	NONE					
Media Samples	NONE (2 nd Floor of 707 does not have painted)	floors)				
Volumetric Samples	NONE					
Isotopic Gamma Scans	NONE					

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Package ID: 99-0002	Building 707				
Survey Area: D (640 m ²)	Survey Unit N/A				

Survey Unit Description: South West corner of room 200, 2nd floor of Building 707 Area is South of Column K-4 and West of Column G-5 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

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Package ID: 99-0002	Building 707
Survey Area: D	Survey Unit· N/A

Survey Unit Description. South West corner of room 200, 2nd floor of Building 707 Area is South of Column K-4 and West of Column G-5 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected.
- Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos.
- 4- Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

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SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID.	99-0002	Building. 707			
Survey Area	D	Survey Unit N/A	1		
Change #	Description		Initiator/ Date	PRE	
1	Added page 6A		12/2/99	Mos	
-2	1	Tran beta mere.	12/2/99	Moe	01/
a	Replaced pg 6 to del	san beta mens. ele spec. betamon	Do of asto	Alle	
3	Added pensied po	- 61	On 01/04/00	ME	
4	Replaced past 9 with New 19 A thru 9I w/ compl	page Added pas leted surveys data	M/Sg) 62/08/01	MA	
<u> </u>					
					<u> </u>
					-
					-
					_
					_
<u> </u>					4
					_
					-
					ľ

SURVEY PACKAGE VALIDATION CHECKLIST FORM

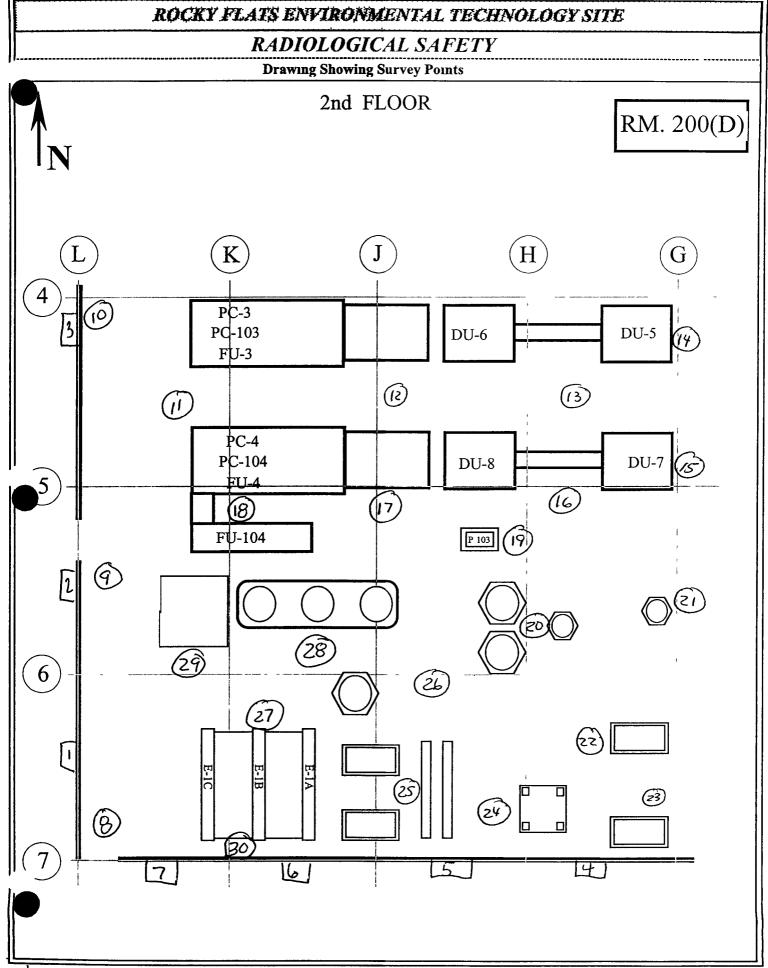
Survey Area: D Survey Type: Reconnaissance Level Characterization S All Documentation Reviewed for Completion Scan Surveys Total Activity Surveys	Survey Unit N/A urvey X Final Status Surv RCT Supervisor	ey □ PRE
All Documentation Reviewed for Completion Scan Surveys	RCT	
Scan Surveys		PRE GA
	1	QA.
Total Activity Surveys		
) S	ga
Exposure Rate Surveys	N/A	MA
Removable Surveys	1	ga
Media Samples	N/A	Wyla
Volumetric Samples	N/A	N/A
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys	1	QA .
Total Activity Surveys	Š	CA .
Exposure Rate Surveys	N/A	W/A
Removable Surveys	1	01
Media Samples	N/A	W/A
Volumetric Samples	N/A	NA
Comments		

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	Avent traid rivergenthen landinvevot bler										
IN	STRUMENT DAT	`A		*********			~	•			
Mfg Eberline	Mfg Eberline	Mf	g NeT	ech		vey Type:	Contar	nination	<u> </u>	·	
Model Sac-4	Model Sac-4	Mo	del Elec	tra		ling <u>707</u>	-				
Serial # 849	Serial #_ 837	Ser	1al # <u>/</u> á	133	Loca	tion RM :	200(1	<u> </u>			
Cal Due <u>4-10-0</u> 0	Cal Due <u>5-/7-0</u>	O Cal	Due 3	-//-00	Purpo	ose Reco	nnaisanc	e Level C	harac	terızatı	on
Bkg o/spm	Bkg <u> </u>	Bk	3 <u>3 </u>) con		P#_99) 7n	7. 100	1		
Efficiency 33%	Efficiency 33%	Eff	iciency <u>.</u>	20 63%	RW	P#	1-70	1-12C	14		
MDA 1/5 dpm	MDA <u>/2 9</u>	MI	A <u>53</u>	a dom	Date	1-27	-00	Tume	130	50	
Mfg Eberline	Mfg Eberline	Mf	g \coprod								
Model BC-4	Model_BC-4	Mo	del	, <u></u>							
Serial # <u>833</u>	Serial # 872		ıal #\								ļ
Cal Due <u>7-14-0</u> 0	Cal Due <u>4-12-00</u>	Cal	Due _^	XA							
Bkg <u>44 40</u>	Bkg <u>46 90</u>	Bkg	3	Δ							Ì
Efficiency 25%	Efficiency 25%	Eff	iciency_	$\overline{}$							
MDA 1024 den	MDA 1045 dpm	MC	A					117 Marie			
Comments Ce	ling/Wa	115	<u>> 2 v</u>	nete	rs:	Biase	ed su	ruey i	2011	ts_	
	and swip							, , , , , , , , , , , , , , , , , , ,			
			SU	RVEY	RESU.	<u>LTS</u>					
Swipe Location\Desc	cription		ovable	Total	Swipe	Location\D	Description			ovable	Total
# (Results in DPM	/100cm ²)	Alpha	Beta	Alpha	#	(Results in D			Alpha	Beta	Alpha
1 >2 V		0	20	0	16	\subset			0	-24	-5
2 72 W		0	36	10	17	C			0	120	0
3 >2 W		0	0	5	18	C		-	0	32	-5
4 72 W		0	16	0	19	<u>C</u>			0	-44	0
5 >2 W	,	0	3		20	C			\bigcirc	-32	5

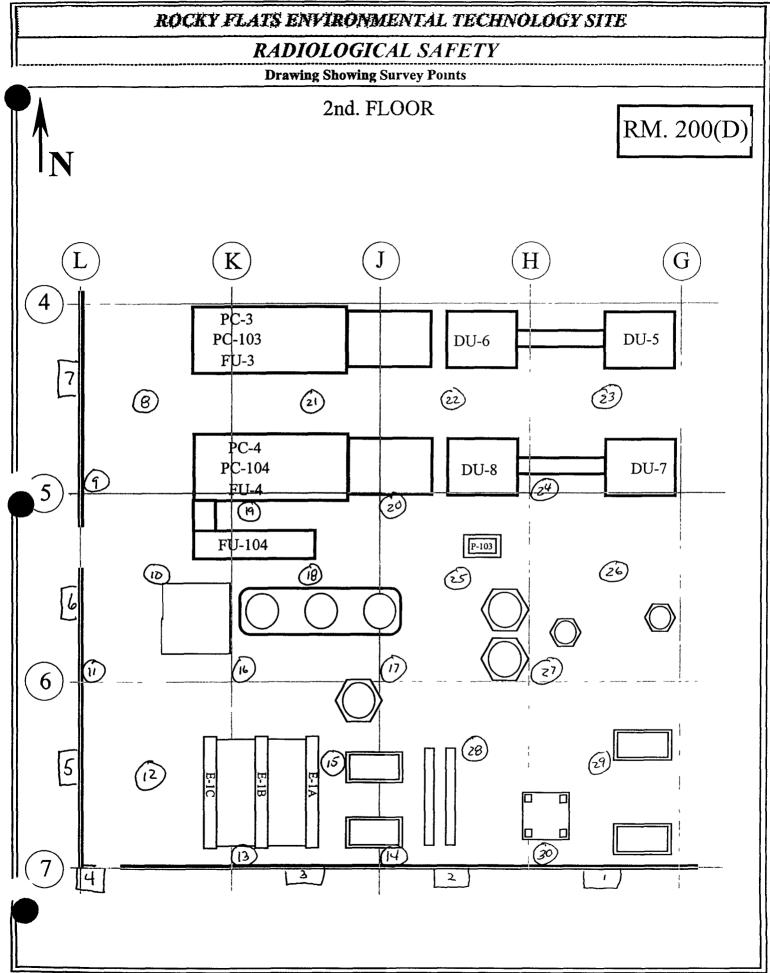
>2 -28 W -/5 <u>5</u> -12 -5 -32 -5 -5 <u>.</u>4

Date Reviewed. 1-28-00 RS Supervision:





INSTRUMENT DA	TA			-				
Mfg Eberline Mfg Eberline		g <u>NeT</u>			vey Type· Contaminatio	<u>n</u>		
Iodel Sac-4 Model Sac-4	_	del Elec		Build	<u> </u>			
Serial # 849 Serial # 837	_	nal #_3		Loca		Chanas	4	
Cal Due 4-10-00 Cal Due 5-17-0		Due <u>7-</u>		Purp	ose Reconnaisance Level	Charac	terizat	ion
Bkg Oil com Bkg Oil com		g <u>2 c</u>		RW	P# 99-707-1204	1		
Efficiency 33% Efficiency 33%		iciency				•		
MDA 11.5 OPM MDA 129 OPI	~ MIT)A <u>51,</u>	3	Date	e1-27-00 Time _	150	20	
Mfg Eberline Mfg Eberline	Mf	g						
Model BC-4 Model BC-4	_	del						
Serial # BC-833 Serial # BC-87	_ Z Ser	nal#	1/.					
Cal Due 7-14-00 Cal Due 4-12-0	o Cal	Due	<u>// A</u>					
Bkg <u>44 cpm</u> Bkg <u>46 cpm</u>				RCT				
Efficiency 25% Efficiency 25%	_	icrency_		l KC1	Print name / Signatu	re	/ Emp	#
MDA 102.40Pm MDA 104.50P				<u> </u>				
Comments Floors / W	alls	<u> </u>	me	ters	s unbiased su	ruel	1 Po	ınts
Im2 scans, Imin	pat:	5, 9	nd	<u>sw</u>	pes see map for	rlo	catu	ons_
Number/Letter ((A'I	den	ate_	دد	lumes			
		······						
	V	SU	RVEY	RESU	<u>LTS</u>			
Swipe Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1. ∠Z G7 → H7	0	8	0	16	F	0	28	10
2. <z h7→j7<="" td=""><td>0</td><td>15</td><td>19</td><td>17</td><td>F</td><td>0</td><td>-8</td><td>19</td></z>	0	15	19	17	F	0	-8	19
3 < 2 J7 → K7	9	52	5	18	F	0	-20	24
4. <2 K7 → L7	0	-12	29	19	F	0	-8	19
5. < 2 L7 → L6	0	-8	29	20	F	0	-40	24
6 < Z L6 → L5	0	48	0	21	F	0	72	34
7 <2 L5 → L4	0	12	19	22	F	0	-8	10
8 F	0	16	19	23	F	0	76	5
9 F	0	-4	5	24	F	0	24	15
10 F	0	-8	10	25	F	0	20	19
11. F	6	-8	10	26	F	0	12	10
12 F	0	8	19	27	F	0	4	43
13 F	0	48	10	28	F	0	32	10
14. F	0	-24	10	29	F	0	24	24
5 F	0	16	15	30	F	0	Ø	5
Date Reviewed: 1-28-00 RS Supervision:								





IN	STRUMENT DATA		
Ifg Eberline	Mfg Eberline	Mfg NeTech	Survey Type. Contamination
Model Sac-4	Model Sac-4	Model Electra	Building 707
Serial # <u>849</u>	Serial # <u>837</u>	Serial # 1233	Location Rm 200 D
Cal Due <u>4-10-0</u> 0	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-∞</u>	Purpose Reconnaisance Level Characterization
Bkg <u>0.1 ym</u>	Bkg <u>00 cpm</u>	Bkg 20 cpm	
Efficiency_33%_	Efficiency 33%	Efficiency 20 63%	RWP# 99-707 -1204
MDA <u>115 dpm</u>	MDA <u>82 dpm</u>	MDA 45 DPM	Date _/-28-00 Time _/430
Mfg <u>Eberline</u>	Mfg Eberline	Mfg <u>ve Tech</u>	
Model BC-4	Model_BC-4	Model Electra	
Serial # <u>833</u>	Serial # 8 72	Serial # 3265	
Cal Due <u>7-14-00</u>	Cal Due <u>4-12-0</u> 0	Cal Due <u>7-3-00</u>	
Bkg <u>46 com</u>	Bkg 45 cpm	Bkg <u>/ O cpm</u>	
Efficiency 25%	Efficiency 25%	Efficiency 2101%	
MDA 1045 dpm	MDA 1034 dom	MDA <u>35. dom</u>	<u> </u>
Comments Eq	aipment &	biased sur	vey points Imin pats and swips
see map	for location	ons () →(2)) overheads #13-45 <2 mereis equipment

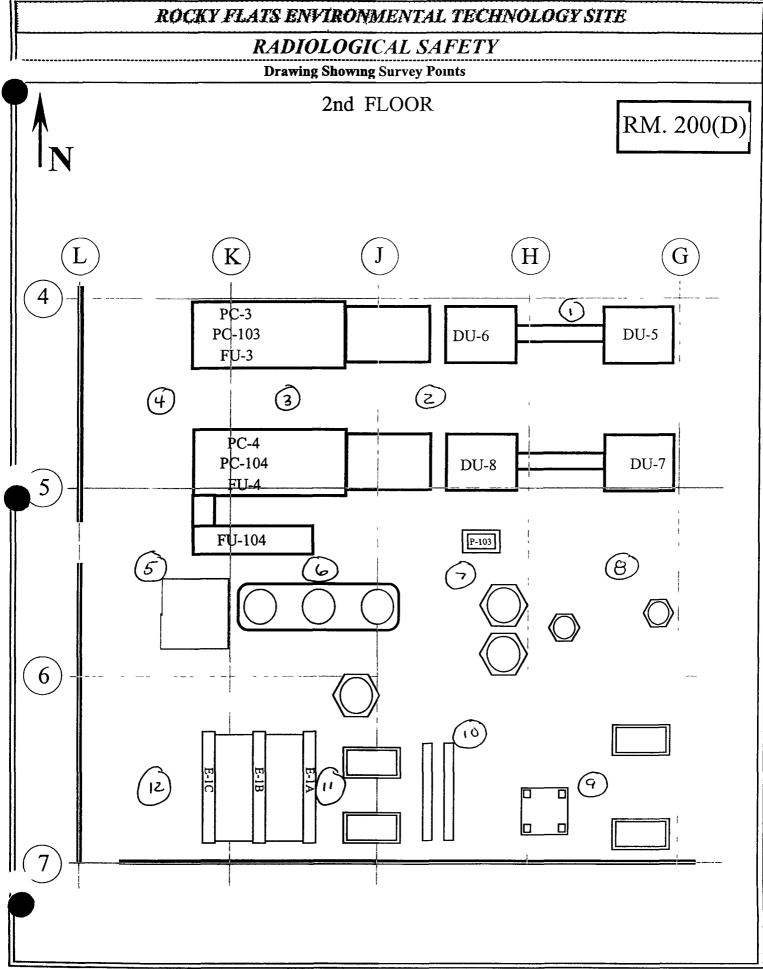
SURVEY RESULTS

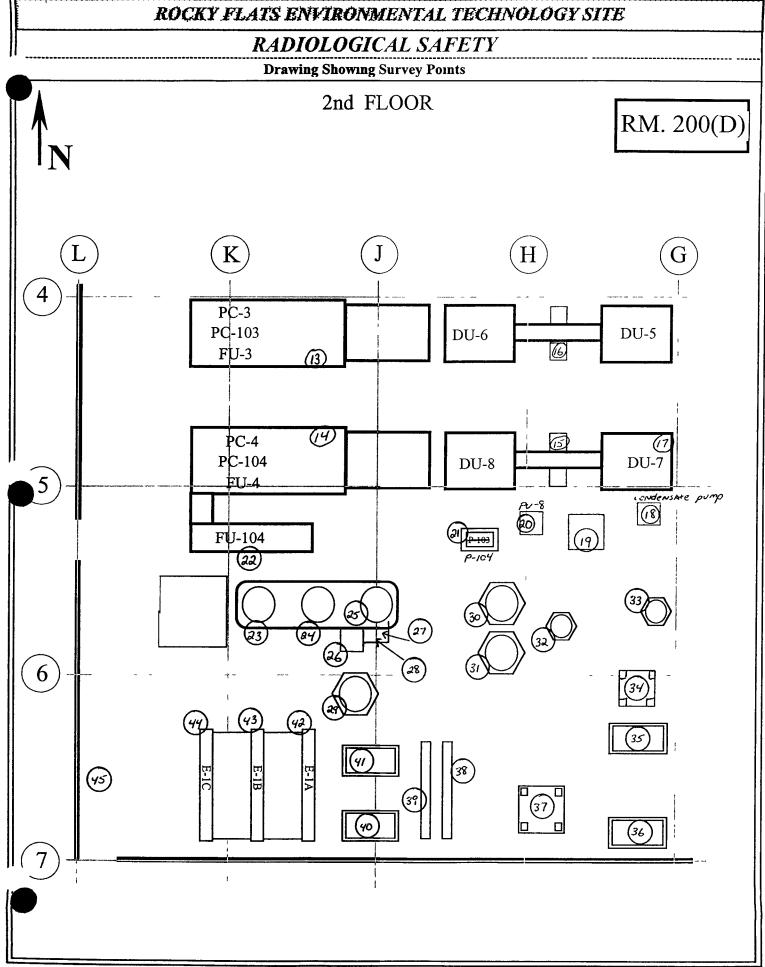
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	novable Beta	Total Alpha
\mathbf{P}_1	Pipes	O	0	15	16	conditioner pumps	6	16	19
2.	Duct	0	હ્ય	5	17	Top of DU-7	0	20	0
3	Wire tray	0	-20	0	18	Condensate pump	0	20	10
4.	Steamline	٥	18	19	19	R-4	3	56	ئ
5	Elect Box	0	24	5	20	PU-8	0	-4	0
6	Wire tray	0	12	5	21	P-104	0	4	0
7.	Steamline	Ó	4	0	22	FU-104	0	24	5
8.	Duct	O	-24	10	23	V-36C	0	-/6	-10
9	Pipe Process water	0	-24	15	24	V-36B	0	28	147
10.	Iteating water return		-12	10	25	V-36A	0	-12	14
11.	Wire tray	0	52	5	26	Dryer	3	-8	-10
12	Wire tray	0	4	10	27	<i>p</i> -8	0	0	-5
13.	E FU-3 Door	0	12	10	28	P-78	0	28	10
14.	C FU-4 Door	0	32	14	29	V-49 SURGETANK	0	20	5
5.	Conditiones pumps	0	56	33	30	V-33	3	36	119

Date Reviewed: $1 - 28 \cdot 00$ RS Supervision

RADIOLOGICAL SAFETY

Drawing Showing Survey Points										
/ipe	Location\Description (Results in DPM/100cm ²)	Remo Alpha	vable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	vable Beta	Total Alpha	
31	V-32	0	12	14	61					
32.	7-34	0	4	0	62					
33	V-35	0	-4	143	63					
34.		0	32	0	64					
35		3	4	-/0	65					
	P-20A Hot water pump	0	-12	14	66					
37	Pipes	3	-40	33	67					
		0	-8	19	68					
i i	E-8-A	3	-4	14	69					
1		0	12	10	70					
41.	PIA cooling water pumps PIB cooling water pumps	3	-36	-5	71					
42	E-1A	0	28	0	72					
1 3.		0	- 48	0	73			:		
4.	<i>E-</i> /C	O	-24	ا ائ	74					
		0	20	-/0	75					
46	Exhaust Duct ENCL OF SURVE	/			76					
47.					77					
48.					75					
49.					79					
50					80					
51.					81					
52					82					
53					83					
54.					84					
55					85					
56					86					
57					87					
3 .					88					
59.					89					
60.					90					



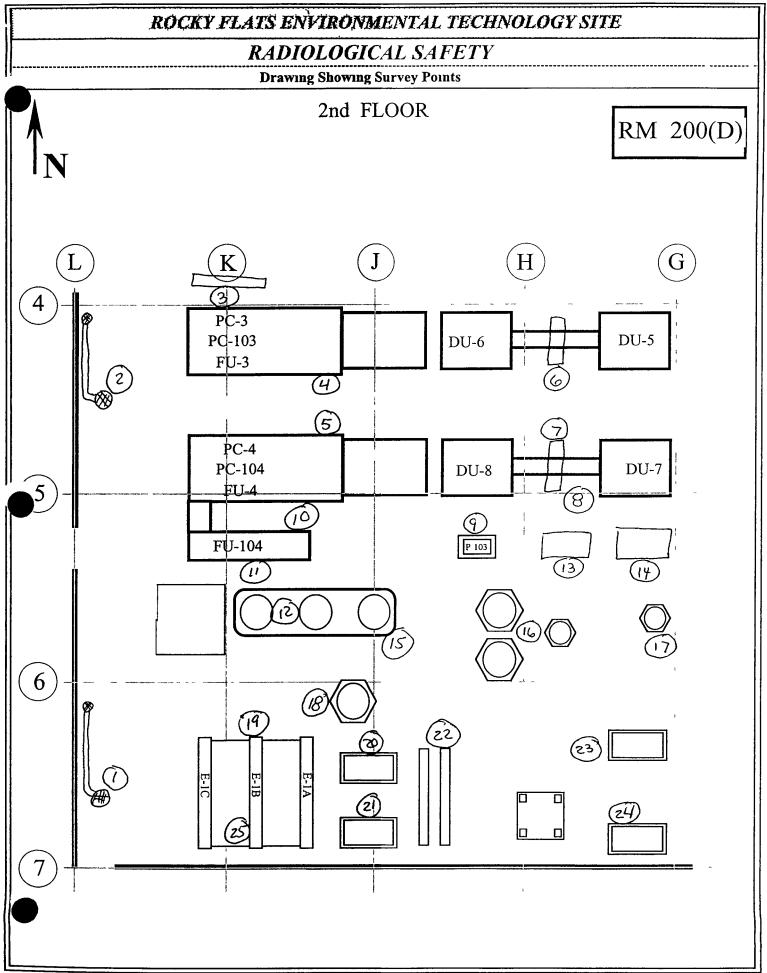




	ROCKI FLAIS BIYIRDIYIAL IBUMIYOBOOL SIIC										
	IN:	STRUMENT DA	ГА			.,		<u> </u>	_		
Mfg	Eberline	Mfg _ Eberline	_ Mf	g NeT	ech_	Surv	ey Type	Contamination	1		
Mod	el <u>Sac-4</u>	Model Sac-4	Mo	del_Elec	ctra	Build					
Seria	1# <u>849</u>	Serial # 837		rnal # 1518 Location ROOM 200 (D)							
Cal I	Due <u>4-10-00</u>	Cal Due <u>5-17-0</u>	Cal	al Due 6 2900 Purpose Reconnaisance Level Character							on
Bkg	0.1	Bkg O,O	Bkg	<u>3</u>	.0		90%	707-1204			
Effic	iency 33%	Efficiency 33%	Eff	ciency	21,86	RW.	P#	1011009			
MDA	<u> 11.5</u>	MDA 8.7	ME	A 4	9,3			-00 Time /	1430	<u> </u>	
Mfg	Eberline	Mfg Eberline	Mfg	3							
Mod	lel <u>BC-4</u>	Model BC-4	Мо	del							
Seria	al #_ <u>Q33</u>	Serial # 872	Ser	al #							
Cal l	Due <u>7-14-0</u> 0	Cal Due 4.12-0	O Cal	Due _t							
Bkg	46.0	Bkg 45.0	Bkg	s <u> </u>	<u> </u>	RCT					
Effic	ciency 25%	Efficiency 25%	Effi	crency_		I KCI	Print na	ime / Signatur	re	/ Emp	#
MD	A 1045	MDA 103,4	ME	Á							
Com	ments <u>FLOO</u>		IASE	DK	2 ME	TERS	- 25 Pc	DINTS			
	•	,	_					FOR LOCATION	MS)		
44-1	<u> </u>	7			<u> </u>		<u> </u>				
			_	SU	RVEY	RESU	LTS				
Swipe	Location\Desc	rintion	Rem	ovable	Total	Swipe	Location\1	Description	Rem	ovable	Total
#	(Results in DPM/		Alpha	Beta	Alpha	#		PM/100cm ²)	Alpha	Beta	Alpha
					1	_				2/	

Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	F Duct	Q	-44	19	16	F Tanks	3	-24	5
2	F Duct	0	- <i>lb</i>	32	17	F Tank	3	44	28
3	F Pipes	0	32	14	18	F Tank	0	24	9
4	F Door	0	-4	32	19	F Tank	0	8	19
5	F Door	0	-4	19	20	F Pump	3	0	14
6.	F Tank	0	32	5	21	F Pump	0	28	14
7	F Tank	0	20	14	22	F Pipes	0	0	32
8	F Drain	0	4	14	23	F Pump	0	-12	28
9	F Pamp	0	-16	19	24	F Pump	0	32	19
10.	F Drain	0	-12	28	25	F Tank	0	84	9
11.	F Filter Fu-104	0	-16	19	26				/
12	F Tanks	0	80	9	27				
13	F Pipes, pump	3	0-	2324	28	NA			
4.	F SEPTIT Duct	0	36	Alter	29				
25	F Pipe	6	-12	87	30				

Date Reviewed 1.28.00 RS Supervision.



SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002		Building 707					
Survey Area: E		Survey Unit N/A					
Initiator/ Date	Release Date	Validation Date	Closure Date				
10/25/98	A 12/21/99	(1) 02/22/00	A) 2/24/00				
- 0	VV	<i>U</i> V					
	<u> </u>						
							

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	002	Building 707		Type 3			
Survey Area E		Survey Unit N/A		Area (m²) 841			
			floor of Building 707 Area is East of Columns G-d as fixed contamination areas				
Survey Type			Classification				
RLC Survey X	FSS □		Class 1 ☐ Class	2 □ Class 3 □ U	Jnknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
30	65	45	0	0	65		
Building		Туре		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type			Classification				
RLC Survey □	FSS □		Class 1 🗆 Class	2 □ Class 3 □ Unknown □			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Desc	cription	_					
Survey Type			Classification				
RLC Survey □	FSS □		Class 1 □ Class 2 □ Class 3 □ Unknown □				
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
	·						
Building		Туре		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type			Classification	Security 1997			
RLC Survey □	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building 707
Survey Area: E	Survey Unit N/A
Survey Unit Description: EAST HALF OF ROOM EAST OF COLUMNS G-7, G-9, G-11 BUILDING 707 CONTAMINATION AREAS	
Building Information:	
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey 🗆
Building Type Type 1 □ Type 2 □ Type 3 X	
Classification Class 1 Class 2 Class 3 Un	
Contaminants of Concern Plutonium X Uranium X	Other
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlinstrumentation may be required for access into	
Special Safety Precautions: Access to overhead Review RWP requirements and surveys prior to overheads Special security requirements for ac	entry Use caution when working in
Isolation Controls:	
Level 1 🗖 Level 2 🗖 N/A X	
Labeling Requirements: NONE	
Survey Package Implementation:	

Survey Unit Description: East half of room 210, 2nd floor of Building 707 Area is East G-7, G-9, G-11 Building 707 radiological areas are posted as fixed contamination areas Minimum Survey/Sampling Measurement Requirements				
Minimum Survey/Sampling Measurement Requirements Measurement Number and Type Comments Surface Activity Measurements FLOORS/WALLS < 2 meters 30 unbiased survey points uniformly distributed throughout the area 35 biased survey points at the following types of areas Points around floors adjacent to internally contaminated equipment (where accessible) such as glycol P-traps (plenums), hydraulic pumps, etc Point(s) near plenum airlocks Tanks having the potential for being internally contaminated Areas of potential concern based on RCT judgement/experience	Survey Unit N/A			
Measurement Number and Type Comments Surface Activity FLOORS/WALLS < 2 meters SEE NOTE 1 Measurements 30 unbiased survey points uniformly distributed throughout the area SEE NOTE 2 35 biased survey points at the following types of areas SEE NOTE 3 - Points around floors adjacent to internally contaminated equipment (where accessible) such as glycol P-traps (plenums), hydraulic pumps, etc SEE NOTE 4 - Point(s) near plenum airlocks - Tanks having the potential for being internally contaminated - Areas of potential concern based on RCT judgement/experience	of Columns			
Surface Activity Measurements FLOORS/WALLS < 2 meters 30 unbiased survey points uniformly distributed throughout the area 35 biased survey points at the following types of areas Points around floors adjacent to internally contaminated equipment (where accessible) such as glycol P-traps (plenums), hydraulic pumps, etc Point(s) near plenum airlocks Tanks having the potential for being internally contaminated Areas of potential concern based on RCT judgement/experience				
Measurements 30 unbiased survey points uniformly distributed throughout the area 35 biased survey points at the following types of areas - Points around floors adjacent to internally contaminated equipment (where accessible) such as glycol P-traps (plenums), hydraulic pumps, etc - Point(s) near plenum airlocks - Tanks having the potential for being internally contaminated - Areas of potential concern based on RCT judgement/experience	3			
throughout the area 35 biased survey points at the following types of areas - Points around floors adjacent to internally contaminated equipment (where accessible) such as glycol P-traps (plenums), hydraulic pumps, etc - Point(s) near plenum airlocks - Tanks having the potential for being internally contaminated - Areas of potential concern based on RCT judgement/experience				
35 biased survey points at the following types of areas - Points around floors adjacent to internally contaminated equipment (where accessible) such as glycol P-traps (plenums), hydraulic pumps, etc - Point(s) near plenum airlocks - Tanks having the potential for being internally contaminated - Areas of potential concern based on RCT judgement/experience				
areas - Points around floors adjacent to internally contaminated equipment (where accessible) such as glycol P-traps (plenums), hydraulic pumps, etc - Point(s) near plenum airlocks - Tanks having the potential for being internally contaminated - Areas of potential concern based on RCT judgement/experience				
contaminated equipment (where accessible) such as glycol P-traps (plenums), hydraulic pumps, etc - Point(s) near plenum airlocks - Tanks having the potential for being internally contaminated - Areas of potential concern based on RCT judgement/experience				
 Tanks having the potential for being internally contaminated Areas of potential concern based on RCT judgement/experience 				
- Areas of potential concern based on RCT judgement/experience				
judgement/experience				
- Near waste drum storage areas				
CEILINGS/WALLS > 2 meters				
30 <u>biased</u> surveys (divided evenly between wall and ceiling when possible) with focus on following areas				
- Walls behind process lines				
- Tops/sides of plenums				
- Stained or discolored areas				
- Areas around pipe or other penetrations				
- Areas of potential concern based on RCT judgement/experience				
EQUIPMENT				
45 <u>biased</u> survey points on equipment with one or more samples from				
- Equipment which has visible leaks or contained spills beneath them				
- Survey points at exhaust ducts				
- 5 survey points on top of overhead piping (where locations are accessible)				
- Other areas of potential concern based on RCT judgement/experience				



Package ID: 99-0002	Building, 707
Survey Area· E	Survey Unit N/A
Survey Unit Description: Fast half of room 210, 2	nd floor of Building 707 Area is East of Columns

Survey Unit Description: East half of room 210, 2nd floor of Building 707 Area is East of Columns G-7, G-9, G-11 Building 707 radiological areas are posted as fixed contamination areas

	Minimum Survey/Sampling Measure	ement Requirements
Measurement	Number and Type	Comments
urface Scanning	FLOORS/WALLS < 2 meters	SEE NOTE 1
	65 1 m ² surface scans shall be taken at each	SEE NOTE 2
	location identified for surface activity measurements Locations found above the	SEE NOTE 3
	DCGL shall be documented	SEE NOTE 4
	CON INCOMENTAL A	
	CEILINGS/WALLS > 2 meters NONE	
	EQUIPMENT	
	NONE	
Media Samples	NONE (2 nd Floor of 707 does not have painted floors)	
	(2 Proof of 707 does not have painted floors)	
		1
olumetric	NONE	
amples		
sotopic Gamma	NONE	
cans		
	NONE	

Package ID: 99-0002	Building 707
Survey Area: E	Survey Unit N/A
Survey Unit Description: East half of room 210, 2	nd floor of Building 707 Area is East of Columns

Survey Unit Description: East half of room 210, 2nd floor of Building 707 Area is East of Columns G-7, G-9, G-11 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

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Package ID: 99-0002

Survey Area: E

Survey Unit N/A

Survey Unit Description: East half of room 210, 2nd floor of Building 707 Area is East of Columns G-7, G-9, G-11 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4- Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e g, indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

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16/14/466

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID:	99-0002	Building 707			
Survey Area	E	Survey Unit N/A			
Change #	Description		Initiator/ Date	PRE	
1	Added page 6A		12/21/19	MBE	
-2	! . ()	rot san beta men	1/12/2/19	MZE	Iff 01/04/d
2	10111111	ele soec, belaves	100 01/00/00	HISE.	
3	Added pevised po	64	1000 01/06/00	HBE	
4	Replaced pg 6 to delle Added LEVISED PQ Replaced pg 9 with dat w New Maps AND Com	ses 9 than 95 picted survey data	02/08/00	MIL	
					_
				40.50.57.77	
					_
					_

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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Buı	lding 707				
Survey Area E	Sur	Survey Unit N/A				
Survey Type. Reconnaissance Level Characterizati	on Surve	y X Final Status Surv	ey 🗆			
All Documentation Reviewed for Completion		RCT Supervisor	PRE			
Scan Surveys		L	Q)			
Total Activity Surveys		,	102			
Exposure Rate Surveys		N/A	VolA			
Removable Surveys		J.	Q ₁			
Media Samples		N/A	UN/A			
Volumetric Samples		N/A N/A	N/A			
All Surveys and Samples Accounted For		RCT Supervisor	PRE			
Scan Surveys		ļ	GA .			
Total Activity Surveys		ß	E)			
Exposure Rate Surveys		N/A	UN/A			
Removable Surveys		ß	M			
Media Samples		N/A	W N/A			
Volumetric Samples		N/A N/A	W N/A N/A			
Comments						



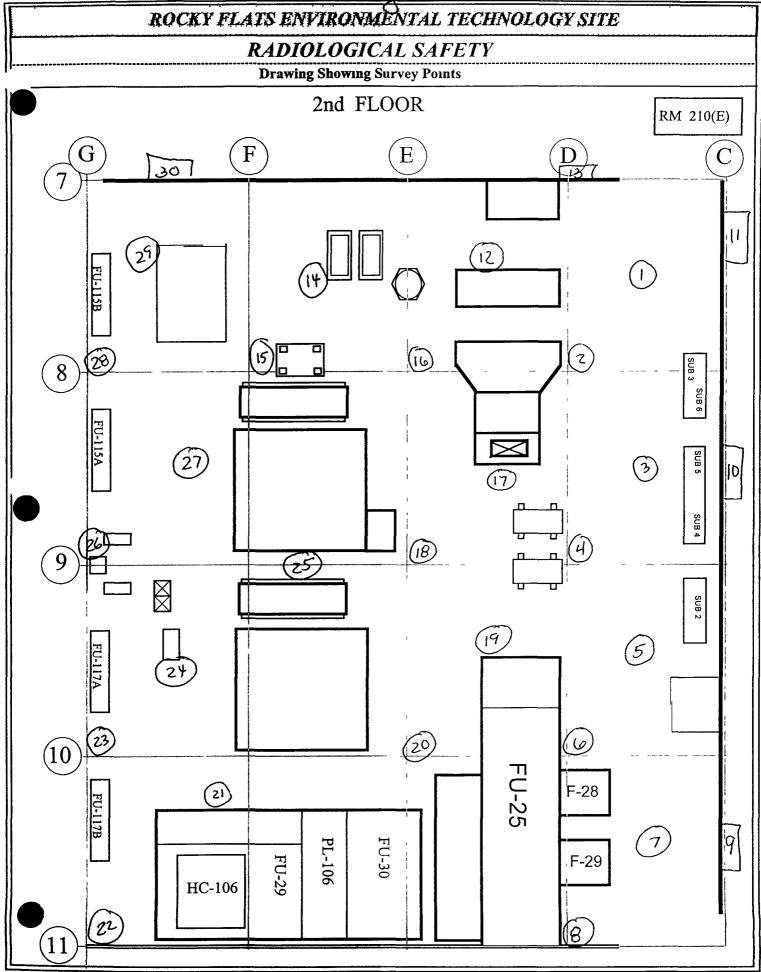
IN	STRUMENT DATA		Contomination					
Ifg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination					
Model Sac-4	Model Sac-4	Model Electra	Building 707					
Serial # 849	Serial #_837_	Serial # 3265	Location Rm 210 (E)					
Cal Due 4-10-60	Cal Due 5-17 00	Cal Due <u>7-3-00</u>	Purpose Reconnaisance Level Characterization					
Bkg O.z cpm	Bkg oo crm	Bkg Z.Ocen	RWP# 00-707-1204					
Efficiency 33%	Efficiency_33%	Efficiency 21.01%	RWP#					
MDA 12 9 0Pm	MDA 820Pm	MDA 442 ppm	Date 1-31-00 Time 1100					
Mfg Eberline	Mfg Eberline	Mfg						
Model BC-4	Model BC-4	Model						
Serial #_ <u>BC-833</u>	Serial # BC-872	Serial #//						
Cal Due 7-14-00	Cal Due 4-12-00	Cal Due 1/A						
Bkg 42 cpm	Bkg <u>44 cpm</u>	Bkg	RCT					
Efficiency 25%	Efficiency 25%	Efficiency	Print name / Signature / Emp #					
MDA (00,3 0?m	MDA 102.4 DPm	MADA						
Comments Flo	or/Walls	<2 meter	s' unbiased survey points					
Im2 scans	Im scans, I min pats and swipes see map for locations							
	Létter (IA)							

SURVEY RESULTS

vipe #	Locatio	on\Descri		Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Descrip (Results in DPM/10		Reme Alpha	ovable Beta	Total Alpha
	F			6	12	10	16	F		0	28	0
2.	F			0	8	5	17	F		0	-8	0
3.	F			0	-z8	15	18	F		0	0	-5
4	t			0	- 32	-5	19	F		3	-16	24
5.	F			0	16	5	20	F		3	20	24
6.	F			0	12	0	21	F		0	٥	15
7	F			3	16	5	22	Ш		0	68	19
8	L			3	40	0	23	F		٥	12	10
9	< Z	W	C10 -> C11	0	0	5	24	F		0	40	29
10	۷2	W	(8→(9	3	40	15	25	F		3	37	5
11	42	W	67-68	0	-16	19	26	F		0	48	5
12	F			0	20	5	27	F		ف	20	5
13	42	W	C7 > D >	0	72	19	28	F		0	32	29
4.	P			0	-16	10	29	F		0	-28	-5
	F			0	-4_	0	30	42 W	F7→(7	O	88	34

Date Reviewed: 2-7-00 RS Supervision.

/()] Rev 05/98



Rev 05/98

164A /466



IN	STRUMENT DATA		
Ifg Eberline	Mfg Eberline	Mfg NeTech	Survey Type: Contamination
Model Sac-4	Model Sac-4	Model Electra	Building 707
Serial # 849	Serial #_837	Serial #_1518	Location Room 210 (E)
Cal Due 4-10-00	Cal Due 6-17-00	Cal Due <u>6-29-00</u>	Purpose Reconnaisance Level Characterization
Bkg 6.2 cpm	Bkg Oil cpm	Bkg 10 cpm	20 717 1201/
Efficiency_33%	Efficiency 33%	Efficiency 2186%	RWP# 00-707-1204
MDA 12,9 DPm	MDA 11 5 Dim	MDA 33.7 01m	Date 2-1-00 Time 1500
Mfg Eberline	Mfg Eberline	Mfg	
ModelBC-4	Model BC-4	Model	
Serial # BC-833	Serial # BC-872	Serial #_/	
Cal Due 7-14-00	Cal Due 4-12-00	Cal Due A	
Bkg 41 cpm	Bkg 42 cpm	Bkg	RCT
Efficiency 25%	Efficiency 25%	Efficiency	Print name / Signature / Emp #
MDA 99.2 0Pm	MDA 10013 DPm	MØA	
Comments Floor	/ Walls < 2 meters	Brased survey po	ınts
1 m ² scans, 1 m ¹	nute pats and swipe	s See map for lo	cations
- 			

SURVEY RESULTS

wipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
	F.Fan F.29	3	16	5	16	F-Filter FUNSA	٥	32	14
36	F. P. trap	0	-68	9	17	F-Filter Fu- 115B	3	-50	19
_3	F-Fan F-28	0	20	14	18	F- Pad	0	16	32
4	t-Door	0	52	9	19	F- Pump	0	12	0
5	F-Door	0	-32	5	20	F- Tank	0	-16	5
6	F-Door	0	4	14	21	F- Door	3	-32	28
	F-Fan	0	4	5	22	F- Door	0	-50	5
8	F-Door	0	12	5	23	F- Duct	0	0	23
9	f- Door	3	-16	9	24	F- Tank	O	-16	0
10.	F- Door	0	4	28	25	F- Tank	0	0	5
11	F- Door	3	44	19	26	F- Pides	0	0	19
12	F- Filter Funns	3	-20	37	27	F- Tank	O	60	19
13	F-P-trap	٥	-36	5	28	F- Pipes	0	28	14
14	F-Filter FU-117A	Ó	-36	14	29_	F- Pipes	0	-12	5
15	F- Tanks	0	So	19	30	F- Tank	3	-12	9

Date Reviewed: 2-7 00 RS Supervis

RADIOLOGICAL SAFETY

eation/Description lts in DPM/100cm²) Tank Pipes Compressor Tank Pipes	Alpha O O O O	Beta -20 -12 -64 -24 -16	Alpha	61 62 63 64 65 66 67 68 69	Location\Description (Results in DPM/100cm ²) Alpha Alpha	Beta Alpl
Pipes Compressor Tank	0 0 3	-12 -64 -24	9 5 9	62 63 64 65 66 67 68 69		
Tank	3	-64 -24	5 9	63 64 65 66 67 68 69		
Tank	3	-24	9	64 65 66 67 68 69		
Pipes	A		-	65 66 67 68 69		
Pipes	0	-76	19	66 67 68 69		
				67 68 69		
				68 69		
				69		
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				76		
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				75		
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				89		
				90		
	8				75 76 77 75 79 80 81 82 83 84 85 86 87 88 88	75 76 77 75 75 79 80 81 82 83 84 85 86 87 88 89

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IN	STRUMENT DATA		~
Ifg Eberline	Mfg Eberline	Mfg NeTech	Survey Type: Contamination
lodel Sac-4	Model Sac-4	Model Electra	Building 707
Serial #_849_	Serial # 837_	Serial # 1233	Location Room 210 (E)
Cal Due <u>4-10-00</u>	Cal Due 5-17 00	Cal Due 5-11-00	Purpose Reconnaisance Level Characterization
Bkg Oilcom	Bkg OO CHT	Bkg oocr	
Efficiency 33%	Efficiency 33%	Efficiency 20.63%	RWP# 00 - 707 - 1204
MDA 11.5 Dfm	MDA 8,2 UF	MDA 13.1 DPA	Date 2-4-00 Time 1530
Mfg Eberline Model BC-4 Serial # &C-833 Cal Due 7-14-co Bkg 45 cpm Efficiency 25% MDA 1034 ppm		Mfg Model Serial # // A Cal Due Bkg Efficiency MOA	RCT //erscy / Signature RCT Cloud & PC (Care) Print name / Signature /
Comments Ceilir	ng / Walls > 2 meter	s Brased survey	points
1 minute nats ar	nd swines See ma	n for locations	

SURV	ÆY I	RESUI	JTS

ς _{wipe} #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
\mathbf{D}_1	С	0	-20	19	16	С	0	0	19
2	С	0	52	-5	17	С	6	52	5
3	С	0	Ő	15	18	C	O	20	29
4	C	3	-12	O	19	>2	0	-8	5
5.	C	3	-8	15	20	>2	0	52	5
6	C	0	24	10	21	72	6	-36	0
7	С	0	-8	0	22	>2	0	-16	10
8	C	0	16	-5	23	>2	3	-40	10
9	C	6	-8	5	24	72	0	-56	10
10	C	O	-24	0	25	72	3	-40	15
11	С	3	12	15	26	72	0	44	15
12	С	0	4	0	27	72	6	0	5-
13.	C	C	-12	10	28	>2	3	-16	5
4	C	0	+12	10	29	>7	0	-20	15
5	C	0	0	10	30	> 2	6	40	10

Date Reviewed: 2.7.00 RS Supervision: Study Print Name

Survey AREA Pkg Page 9F of 9 RS FORMS 07.02-01 ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points** 2nd FLOOR RM 210(E) F 21 20 22 Z 1 8 (15 SUB 5 (i)8 6 6 (10)FU-25 (1) F-28 FU-30 FU-29 F-29 26 HC-106

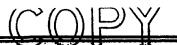
29

(11)

30

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28



RÖCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

IN	STRUMENT DATA		
Mfg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination
Iodel Sac-4	Model Sac-4	Model Electra	Building 707
Serial # 849	Serial # 837	Serial #	Location Equipment & Overhead Rm 210(E)
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due _5-//-00	Purpose Reconnaisance Level Characterization
Bkg 02 spm	Bkg <u>0.1</u>	Bkg <u>00 ∝</u>	
Efficiency 33%	Efficiency 33%	Efficiency <u>30 63 2</u>	RWP# 00-707-1204
MDA 12.9 dpm	MDA <u>//5</u>	MDA 13.2 dom	Date <u>2-1-00</u> Time <u>/600</u>
Mfg Eberline	Mfg Eberline	Mfg	
Model BC-4	Model_BC-4	Model	
Serial # 833	Serial # <u>872</u>	Serial #	
Cal Due	Cal Due <u>4-12-00</u>	Cal Due	
Bkg <u>41 spn</u>	Bkg 42 cpm	Bkg/	RCT
Efficiency 25%	Efficiency 25%	Efficiency	Print name / Signature / Emp #
MDA 992 don	MDA 1003 dan	MDA	
Comments <u>Fa</u>	uipment B	used surve	ey points I min pets and swipes
See man	for location	n S	
~ ·	overheads		

SURVEY RESULTS

Swipe	Location\Description	Rem	ovable	Total	Swipe	Location\Description	Rem	ovable	Total
#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
1	FU-25 Roof	0	-16	44	16	FU-117A	0	-12	10
2	F-29	3	-20	34	17	FU-115A	0	-24	ςO
3	P.Trap	0	12	44	18	FU-115 B	0	-40	24
4	•	0	24	19	19	BIN	0	0	0
5.	Fu-25 Roof	0	-32	150	_20	Pump	3	-8	29
6	FU-25 Door	0	12	0	21	7-44	0	-32	0
7	Fu-25 Door	0	20	48	22	RHC-1	0	-/6	15
8	Door	3	44	34	23	450-498	0	12	44
9	Roof	0	8	-5	24	450-497	0	12	34
10	FU-30 Pipe	0	-8	5	25	RC-18 Pump	3	-8	-5
11	11C-106 Door	3	24	19	26	RC 1B super Heuter	0	-24	0
12	FU-29 Door	0	-8	19	27	RC-IA	0	-16	0
13	FU-29 Door	0	-32	44	28	RC 19 super Heates	0	12	-19
4	P-Trap	0	-12	10	29	Pump	0	-4	0
5 .	FU-117B	0	-16	-10	30	>2M Duct	3	-8	-/0

Date Reviewed. 2-7-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

H	Drawing Showing Survey Points									
/ipe	Location\Description (Results in DPM/100cm ²)		ovable	Total Alpha	Swipe		Remo	vable Beta	Total Alpha	
31	>2M Duct	3	-4	0	61	(results in D1 Ha robert)	-			
32	72M Duct	0	4	-5	62					
33	>2M Duct	ŝ	16	-10	63					
34	72M Duct	3	-8	5	64					
35.	>2M Steamline	0	-8	0	65					
36	22m Duct	0	-8	-10	66					
37	>2m Duct	3	-16	5	67					
38.	72M Hot water supply	0	-16	0	68		/			
	72m Duct	6	-16	-19	69	7				
40.	>2M Duct	0	-24	-15	70	/				
41.	>2m Duct	0	-24	-10	71	/				
42.	72 M. Hot water supply	3	16	-10	72					
!3	72m Duct	0	32	-5-	73					
4.	>2m Duct	3	36	-10	74	h /				
45	>2M Duct	3	-8	-5	_75	* / A				
46	END of Survey				76	/				
47				<u> </u>	77					
48					75	/				
49		\mathcal{A}			79	, ,				
50.		/			80					
51					81	/				
52	- / ₁ / ₁				82					
53	1/12				83	/				
54					84	,				
55. 56					85					
50					86 87					
					88					
59.	/				89					
60.	/				90	/				
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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002		Building 707			
Survey Area: F		Survey Unit N/A			
Initiator/ Date	Release Date	Validation Date	Closure Date		
9) 10/25/98	(1) 12/21/99	1 3/22/00 Hap	ROM 4/13/00		
		-			
-					
	-				

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3		
Survey Area F		Survey Unit N/A	Area (m²) 841			
		of room 210, 2 nd flos are posted as fixed			olumns G-7, G-9,	
Survey Type			Classification			
RLC Survey X	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown X	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
30	65	45	0	0	65	
Building		Туре		Survey Area		
Survey Unit			Area (m²)			
Survey Unit Description						
Survey Type			Classification			
RLC Survey □	FSS □		Class 1 Class	2 ☐ Class 3 ☐ U	Jnknown 🗖	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building Type			Survey Area			
Building		Туре		Survey Area		
Building Survey Unit		Туре	Area (m²)	Survey Area		
	cription	Туре	Area (m²)	Survey Area		
Survey Unit	cription	Туре	Area (m ²) Classification	Survey Area		
Survey Unit Survey Unit Desc	FSS 🗆	Туре			Jnknown □	
Survey Unit Description Survey Type		Type Equipment Surface Activity Measurements	Classification		Jnknown □ Surface Activity Scans	
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface Activity	Classification Class 1 □ Class	2 □ Class 3 □ U	Surface Activity	
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface Activity	Classification Class 1 □ Class	2 □ Class 3 □ U	Surface Activity	
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements	FSS Biased Surface Activity	Equipment Surface Activity Measurements	Classification Class 1 □ Class	2 □ Class 3 □ U Volumetric Samples	Surface Activity	
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1	2 □ Class 3 □ U Volumetric Samples	Surface Activity	
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1	2 □ Class 3 □ U Volumetric Samples	Surface Activity	
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements Type	Classification Class 1 □ Class Media Samples Area (m²)	2 Class 3 U Volumetric Samples Survey Area	Surface Activity	
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description Survey Unit Description	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples Area (m²)	2 Class 3 U Volumetric Samples Survey Area	Surface Activity Scans	

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building. 707					
Survey Area: F	Survey Unit: N/A					
Survey Unit Description: WEST HALF OF ROOM 210, 2 ND FLOOR OF BUILDING 707 AREA IS WEST OF COLUMNS G-7, G-9, G-11 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS						
Building Information:						
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey □					
Building Type Type 1 🗖 Type 2 🗖 Type 3 X						
Classification Class 1 Class 2 Class 3 Ur	known X					
Contaminants of Concern Plutonium X Uranium X	Other					
Justification for Classification: N/A						
Special Support Requirements: Ladder, manli instrumentation may be required for access into	•					
Special Safety Precautions: Access to overhead Review RWP requirements and surveys prior to overheads. Special security requirements for ac	entry Use caution when working in					
Isolation Controls:						
Level 1 □ Level 2 □ N/A X						
Labeling Requirements: NONE						
Survey Package Implementation:						

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Package ID. 99-0002		uilding. 707
Survey Area: F	Sı	urvey Unit N/A
Survey Unit Description: West half of room 210, 2 nd floor of G-7, G-9, G-11 Building 707 radiological areas are posted as fixed		e e e e e e e e e e e e e e e e e e e
	Mınımum Survey/Sampling Me	asurement Requirements
Measurement	Number and Type	Comments
Surface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1
Measurements	30 <u>unbiased</u> survey points uniformly distribution throughout the area	SEE NOTE 2
	35 <u>biased</u> survey points at the following ty areas	pes of SEE NOTE 3 SEE NOTE 4
	- Points around floors adjacent to inter- contaminated equipment (where accessuch as glycol P-traps (plenums), hyd pumps, etc	ssible)
	- Point(s) near plenum airlocks	
	- Tanks having the potential for being internally contaminated	
	- Areas of potential concern based on R judgement/experience	ест
	- Near waste drum storage areas	
	CEILINGS/WALLS > 2 meters	
	30 <u>biased</u> surveys (divided evenly between and ceiling when possible) with focus on following areas	ı wall
	- Walls behind process lines	
	- Tops/sides of plenums	
	- Stained or discolored areas	
	- Areas around pipe or other penetration	ns
	- Areas of potential concern based on R judgement/experience	CCT
	EQUIPMENT	
	45 <u>biased</u> survey points on equipment with or more samples from	one
	- Equipment which has visible leaks or contained spills beneath them	
	- Survey points at exhaust ducts	
	- 5 survey points on top of overhead processible)	ping
	- Other areas of potential concern based RCT judgement/experience	d on

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Package ID: 99-0002	Building 707
Survey Area: F	Survey Unit N/A
Survey Unit Description: West half of room 210	2 nd floor of Building 707 Area is West of Columns

Survey Unit Description: West half of room 210, 2nd floor of Building 707 Area is West of Columns G-7, G-9, G-11 Building 707 radiological areas are posted as fixed contamination areas

Minimum Survey/Sampling Measurement Requirements					
Measurement	Number and Type	Comments			
Surface Scanning	FLOORS/WALLS < 2 meters	SEE NOTE 1			
	65 1 m ² surface scans shall be taken at each location identified for non-scan surface activity	SEE NOTE 2			
	measurements Locations found above the	SEE NOTE 3			
	DCGL shall be documented	SEE NOTE 4			
	CEILINGS/WALLS > 2 meters				
	NONE				
	EQUIPMENT				
	NONE				
Media Samples	NONE				
	(2 nd Floor of 707 does not have painted floors)				
/olumetric Samples	NONE				
ampies					
sotopic Gamma	NONE				
sotopic Gamma Scans	INONE				

Package ID: 99-0002

Survey Area · F

Survey Unit N/A

Survey Unit Description: West half of room 210, 2nd floor of Building 707 Area is West of Columns

Survey Unit Description: West half of room 210, 2nd floor of Building 707 Area is West of Columns G-7, G-9, G-11 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

have the color of or over on

Package ID: 99-0002	Building: 707
Survey Area: F	Survey Unit N/A

Survey Unit Description: West half of room 210, 2nd floor of Building 707 Area is West of Columns G-7, G-9, G-11 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4. Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

Rackage ID. 99-0002

Building 707

Survey Area. F

Survey Unit N/A

Survey Unit Description: West half of room 210, 2nd floor of Building 707 Area is West of Columns G-7, G-9, G-11 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer on the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building 707
Survey Area: F	Survey Unit N/A

Survey Unit Description: West half of room 210, 2nd floor of Building 707 Area is West of Columns G-7, G-9, G-11 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS:

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos.
- 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

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SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID.	99-0002	Building 707		·	
Survey Area:	F	Survey Unit N/A			1
Change #	Description		Initiator/ Date	PRE	
1	Added page GA		12/21/99	SIS	
2	Deleted Ref to dilect	Sour beta news	1 12/2/19	MOR	9/01/06/0
2	Replaced on to delete	Spec Act to beth	Van otosta	#195	
3	Added board or	61	Mariala	ALS:	-
4	TEPLACED PO Q WITH A SOUND IN SURVEY THITA ON PG3 Q TLADUS	APS AND complete	1/2/ 02/29/00	MI	1
					-
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					-

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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Building 707				
Survey Area: F	Survey Unit N/A	irvey Unit N/A			
Survey Type Reconnaissance Level Characterizati	on Survey X Final Status Surv	rey □			
All Documentation Reviewed for Completion	RCT Supervisor	PRE			
Scan Surveys	1	Q/)			
Total Activity Surveys	1				
Exposure Rate Surveys	N/A	WN/A			
Removable Surveys	1	OA.			
Media Samples	N/A	N/A			
Volumetric Samples	N/A	N/A			
All Surveys and Samples Accounted For	RCT Supervisor	PRE			
Scan Surveys	1	QA .			
Total Activity Surveys	1	60			
Exposure Rate Surveys	N/A	VN/A			
Removable Surveys	1	00			
Media Samples	N/A	UNIA			
Volumetric Samples	N/A	N/A			
Comments All survey pts. IDENTIFIED ON	SURVEY MAPS.				

Page superceded M 2/29/00 Chg # 4

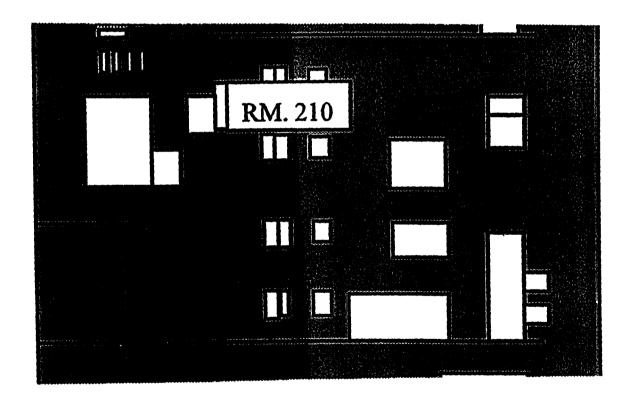
	$f_{1} = f_{1} + f_{2}$	En 11 Stage 1888	aakak yve	ymuzvi me	C)##MG#L(OX	ar yur e			
\ I	NSTRUMENT	DATA					Cities is securities and an arrangement of the control of the cont		
Mfg	Mfg.			Survey Ty	pe:				
Model	Model		1	Building					
Serial #	Serial #	Serial	#	Building Location*					
Cal Due	Cal Due	Cal D	ue						
Bkg	Bkg								
Efficiency	Efficiency		ency	RWP#					
MDA	MDA		·	_ [
				Date		Time			
Mfg	Mfg	Mfg_		.			:		
Model	Model		1	-					
Serial #	Serial #	Serial	#	P	rınt name	Signatur	re Emp#		
Cal Due	Cal Due		ue			_	,		
Bkg	Bkg			RCT		<u> </u>			
Efficiency	Efficiency		ency	. P	rint name	Signatur	re Emp#		
MDA	MDA	MDA		<u>.L</u> _					
PRL#:		\							
Comments									
			\						
			/						
			SURVEY I	RESULTS					
REMOVABLE	REMOVABLE	DIRECT	DIRECT	REMOVABLE	REMOVABLE	DIRECT	DIRECT		
Alpha	Beta	Alpha DPM/100 cm ²	Beta DPM/100 cm ²	Alpha	Beta	Alpha	Beta		
DPM/100 cm ²	DPM/100 cm ²	I IVAA/IIII com-				TABLE / I (VA App.	TYPIKA/TINI non-		
'!		DI W TOO GII	DPW/100Cm	DPM/100 cm ² 26	DPM/100 cm ²	DPM/100 cm ²	DPM/100 cm ²		
1			DPW/100cm	26 27	DPM/100 cm ²	DPM/100 cm ²	DPM/100 cm²		
2			DFW 100cm	26 27 28	DPM/100 cm ⁻	DPM/100 cm²	DPM/100 cm*		
3			DFW TOUCH	26 27 28 29	DPM/100 cm	DPM/100 cm²	DPM/100 cm*		
3			DFW 100Cm	26 27 28 29 30	DPM/100 cm	DPM/100 cm²	DPM/100 cm*		
3			Drw 100cm	26 27 28 29	DPM/100 cm	DPM/100 cm²	DPM/100 cm*		
3			Drw 100cm	26 27 28 29 30 31	DPM/100 cm	DPM/100 cm²	DPM/100 cm*		
3 4 5 6 7 8			Drw 100cm	26 27 28 29 30 31 32 33 34	DPM/100 cm	DPM/100 cm²	DPM/100 cm*		
3 4 5 6 7 8 9 10				26 27 28 29 30 31 32 33 34 35	DPM/100 cm	DPM/100 cm²	DPM/100 cm*		
3 4 5 6 7 8 9 10 11				26 27 28 29 30 31 32 33 34 35 36	DPM/100 cm	DPM/100 cm²	DPM/100 cm*		
3 4 5 6 7 8 9 10 11 12				26 27 28 29 30 31 32 33 34 35	DPM/100 cm	DPM/100 cm²	DPM/100 cm*		
3 4 5 6 7 8 9 10 11				26 27 28 29 30 31 32 33 34 35 36 37	DPM/100 cm	DPM/100 cm²	DPM/100 cm*		
3				26	DPM/100 cm	DPM/100 cm²	DPM/100 cm*		
3				26	DPM/100 cm	DPM/100 cm²	DPM/100 cm*		
3				26	DPM/100 cm	DPM/100 cm²	DPM/100 cm*		
3				26	DPM/100 cm	DPM/100 cm²	DPM/100 cm*		
3				26	DPM/100 cm	DPM/100 cm²	DPM/100 cm*		
3				26	DPM/100 cm	DPM/100 cm²	DPM/100 cm*		
3				26	DPM/100 cm	DPM/100 cm²	DPM/100 cm*		
3				26	DPM/100 cm	DPM/100 cm²	DPM/100 cm*		
3				26	DPM/100 cm	DPM/100 cm²	DPM/100 cm*		
3		S Supervision		26	DPM/100 cm	DPM/100 cm²	DPM/100 cm*		

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RS FORMS 07.02-4

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



Rey. 05/98

≫ -

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

IN	STRUMENT DATA	<u> </u>
1fg Eberline	Mfg Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial # <u>837</u>	Serial # 3265
Cal Due <u>4-10-00</u>	Cal Due 5-1700	Cal Due 7-3-00
Bkg OIZ CPM	Bkg Oil Car	Bkg Zio cpm
Efficiency 33%	Efficiency 33%	Efficiency 21.210
MDA 12.9 17m	MDA 115 Dem	MDA 44 - dom
Mfg Eberline Model BC-4 Serial # CC - 333 Cal Due 7-14-00 Bkg 41 Cpr. Efficiency 25%	Mfg Eberline Model BC-4 Serial # &C-872 Cal Due 4-12-00 Bkg 42 C?m Efficiency 25%	Mfg Model Serial #/V/+ Cal Due Bkg Efficiency
MDA 992000	MDA 100,3 ppm	MDA
Comments Fla	05/1/01/5	< 7 moto

Survey 7	Type Contamination
Building	707
Location	Rm 210 (F)
Purpose _	Reconnaisance Level Characterization
RWP#_	00 -707 -1204
Date	2-1-00 Time /500

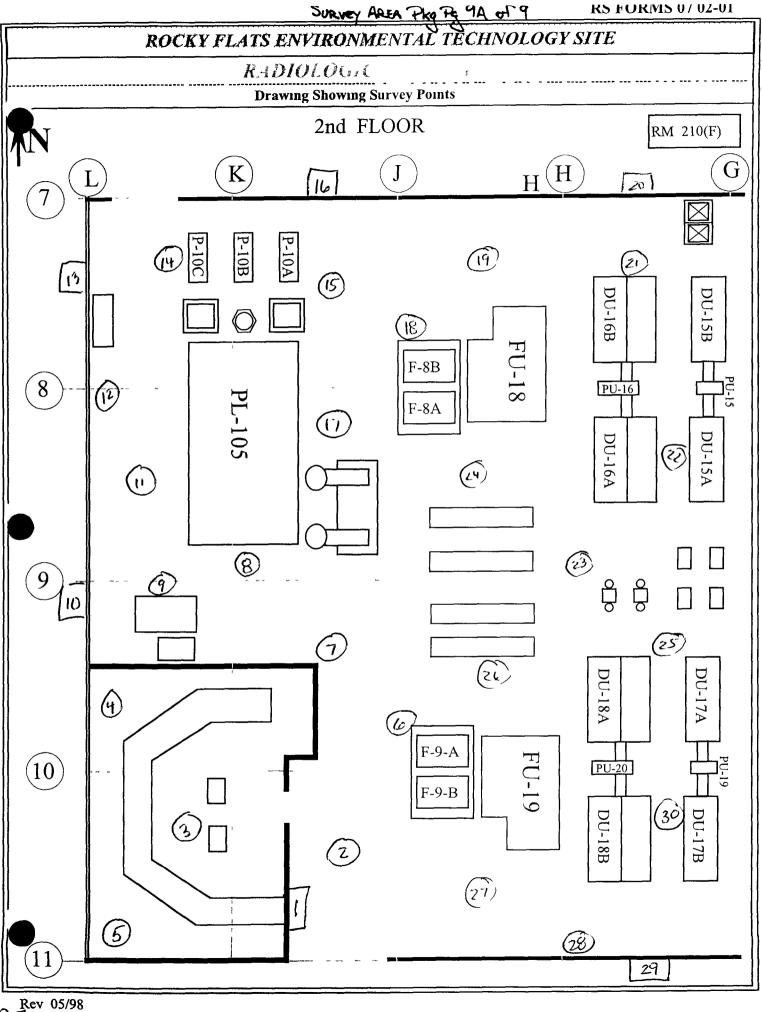
RCT_ / Signature / Emp #

Comments Floor/Walls < 2 meters! unbiased survey points Im2 Scans Imin pats and shipes See map for location

SURVEY RESULTS

<u> </u>									
Swipe #	pe Location\Description (Results in DPM/100cm ²)		Removable Total Swipe Location\Description Alpha Beta Alpha # Location\Description (Results in DPM/100cm²)		Location\Description (Results in DPM/100cm ²)	Rem Alpha	novable Beta	Total Alpha	
1	42 W	3	36	0	16	42 W K7 → J7	0	0	-10
2	(=	O	12	10	17	F	0	28	0
3	F	0	-12	-10	18	F	0	-40	29
4	F	0	40	O	19	F	0	28	15
5	F	6	0	5	20	∠2 W H7→G7	0	40	5
6	F	0	-20	43	21	F	0	-4	10
7	F	0	0	19	22	F	0	-12	15
8	F	0	4	43	23	F	0	SO	19
9	F	0	-56	19	24	F	\hat{C}	12	5
10	22 W L10→L9	0	-20	19	25	F	0	0	24
11	F	0	z8	24	26	F	\circ	-4	24
12	F	3	-16	0	27	F	0	44	24
13 -	12 W L8 → L7	Ö	-12	29	28	F	3	28	24
'4	F	3	-16	10	29	∠2 W H11>611	0	-50	15
15	F	3	24	34	30	F	3	28	29

Date Reviewed 2.17 W RS Supervision



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

IN	STRUMENT DATA	<u> </u>
fg Eberline	Mfg Eberline	Mfg NeTech
lodel Sac-4	Model Sac-4	Model Electra
Serial # 849	Serial # 837	Serial # <u>1233</u>
Cal Due <u>4 10 - 0</u> 0	Cal Due <u>5 17-00</u>	Cal Due <u>5-11-00</u>
Bkg <u>0.3 cpm</u>	Bkg Olcon	Bkg 3 com
Efficiency 33%	Efficiency 33%	Efficiency 20 63%
MDA 139 dpm	MDA 115 mg/	MDA <u>52.2 dom</u>
-	dpm	
Mfg <u>Eberline</u>	Mfg Eberline	Mfg
Model BC-4	Model_BC-4	Model
Serial # <u>833</u>	Serial # 872	Serial #
Cal Due <u>7 /4 00</u>	Cal Due <u>4-12-00</u>	Cal Due NA
Bkg <u>35 ym</u>	Bkg 47 cpm	Bkg /\
Efficiency 25%	Efficiency 25%	Efficiency
MDA 925 dom	MDA 1055 dem	MDA
Comments Equip	ment Biased surv	ey points

Contamination Survey Type Building 707 Location Room 2/0 Reconnaisance Level Characterization Purpose RWP# 00-707-1204 Date 2-3-00 Time 1530

1 minute pats and swipes See map for locations
31 -45 over heads

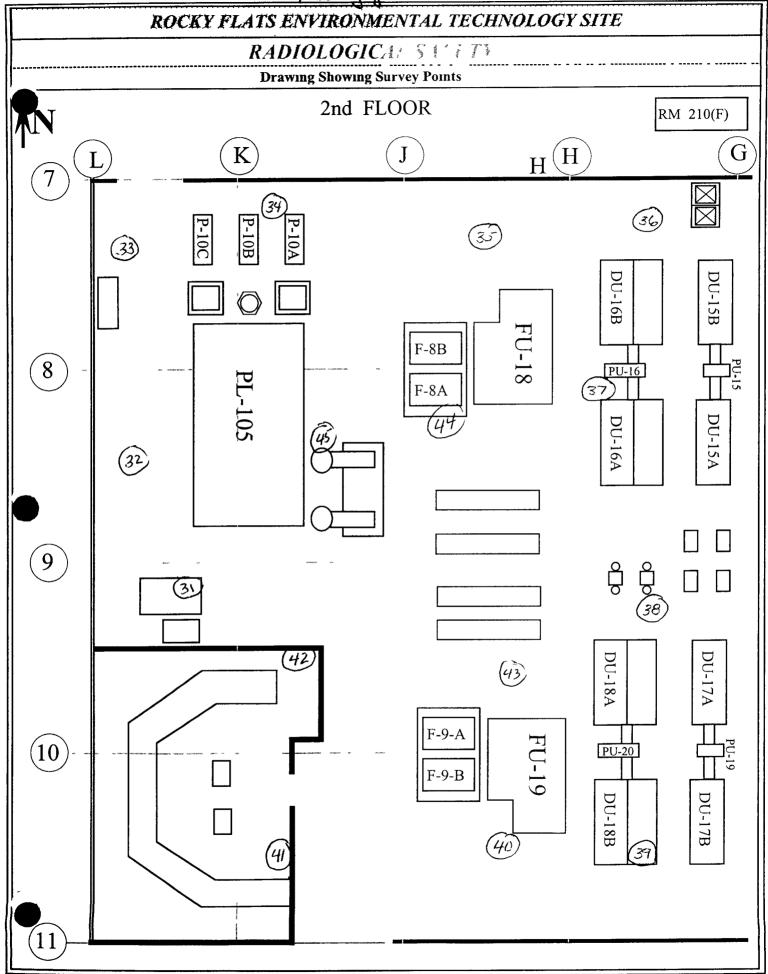
#7 contained contamination on Gasket 43,000 dpm (

SURVEY RESULTS

Swipe	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
	AF - 4	0	-8	-/5	16	Rump	0	-8	0
2	PL-105 Door	0	-32	0	17	FU-17A	0	28	0
3	PC-105 Door	0	12	-/5	18	PU-19	0	12	0
4	PL 105 Door	0	-28	-10	19	PU-18B	3	28	-5
5	P1-105 Door	0	28	-/0	20	PU-20	0	-36	15
6	P4-105 Door	0	-8	5	21	CU-8A	0	-12	5
7	HC 105 Door	0	-8	19	22	KAthene 5-13	0	-24	-/5
8	MP PUMP	0	-4	-15	23	KAthene 6-A	3	76	-10
9	P-/OC	0	32	10	24	332-77A	0	-12	-10
10	P-108	0	0	10	25	FU-19 Dogs	0	-8	5
11	P-10A	3	68	-5	26	F-9 A	0	20	- 5
12	F-8B	0	8	0	27	Rimp Fams	3	44	10
13	PU-16	0	12	10	28	PTRAF	0	- JZ	0
14	DU-16B	0	-68	-5	29	Pump	6	-4	1937
5	PU-15	0	40	-/0	30	Pump	0	12	285

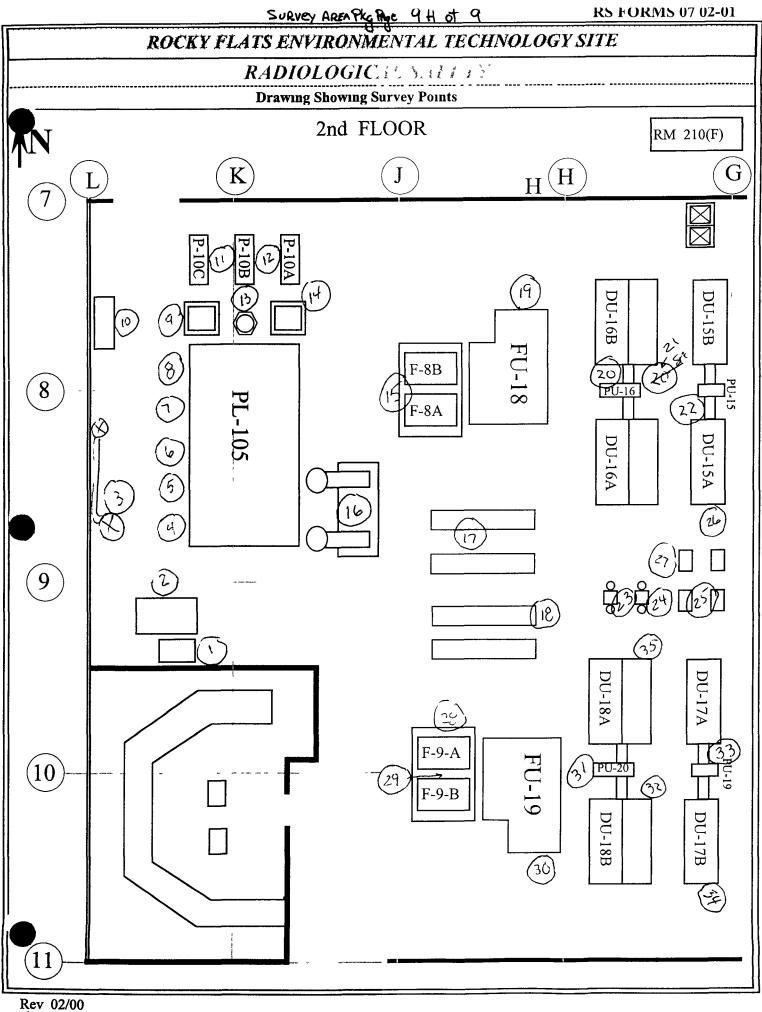
Date Reviewed. 2-17.00 RS Supervision

	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE									
	RADIOLOGIC .									
	Drawing Showing Survey Points De Location\Description Removable Total Swipe Location\Description Removable Total									
#	Location\Description (Results in DPM/100cm ²)	Alpha		Total Alpha		Location\Description (Results in DPM/100cm ²)	Alpha		Total Alpha	
31	Top AF-4	0	16	-5	61			ļ		
32	I Beam	0	0	0	62					
33	I Beam	0	-16	0	63					
34	HP Vac piper	0	-16	15	64					
35	Duct	0	-12	15	65					
36	Duct	0	4	-5	66					
37	Kathene line	3	-12	19	67	, , , , , , , , , , , , , , , , , , ,	/			
38	Fu-98	O	-8	5	68					
39	Top Dule B	0	20	٥	69				_	
40	Duct	0	4	O	70					
41	Duct	0	-32	-5	71					
42	Roof SOE Rm	0	12	-5	72					
13	Duct	3	-64	15	73					
4	Top F-8A	0	·Ø	-5	74	/ A				
45	Duct	3	ප	C	75	1' A		_		
46	END of Survey				76					
47	7				77	/				
48					75	1	1			
49					79	/				
50					80	j	,-,			
51					81	I				
52					82	/				
53					83	/				
54					84					
55					85					
56					86					
57					87					
					88					
59	/				89					
60					90					



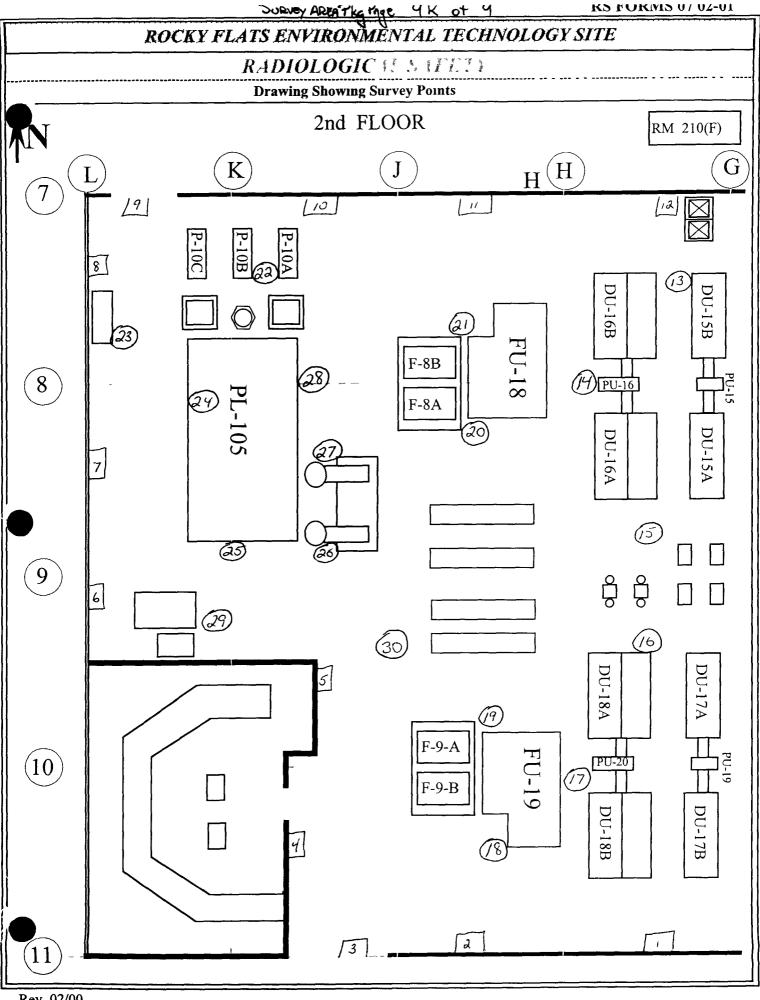
		ROCKY FLA	TS E	NVIR	ONM	ENT	AL TECHNOLOGY SITE	5		
<u> </u>	INS	STRUMENT DA	TA			-n	C			
_	Eberline	Mfg Eberline	_	g Ne			Survey Type Contamination			
	lel <u>Sac-4</u> al # % 49	Model Sac-4 Serial # \$2.37	_	odel <u>Ele</u>	ctra 5/8		Building 707 Location Room $2/0$ (F)			
	Due 4-10-00				-29-00			Charac	terizati	ion
		Bkg Olu) con	2-	1700			
Effic	nency 33%	Efficiency 33%	_ Eff	iciency	37.80	7 RW	P# <u>00 - /0/ - 12 04</u>	•		
MD	A 13.9 dpm	MDA 11.5 dg			3.7d		2-3-00 Time_	150	0	
Mfg		Mfg Eberline	_ Mf							
	Model BC-4 Model Model Serial # 833 Serial # 872 Serial # 4									
		Cal Due 4/20	-	Due /	A					
Bkg	35 com	Bkg 47 cq	_	7		RCT	•			
3	ciency 25%	Efficiency 25%	-	iciency		I KC I	Print name / Signatur	re	/ Emp	y #
		MDA 105.51	-			1				·
		/ Walls < 2 mete nute pats and sw			ap for l		ne			
	m- scans, i mi	nute pais and sw	ipes	BCC III	ap IOI I	ocatio	15			
				<u>SU</u>	RVEY	RESU	<u>LTS</u>			
Swipe #	Location\Desci	ription	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
—	(Results in DPM)	100cm²)		١.,				3		† <u>-</u>
1	- Tipe		0	-24	23	16	F- tan F-115- A+B	3	8	37
2	F-AF-9	<u>Filter</u>	0	-32 40	23	17	F-Unit 5-A	5	70	111
3	F-Air Re	- 105	0	 	 	18	F Unit		120	14
4		Memum	0	-4	23	19	F- DOOC FU-18	0	124	14
5	F-Door	Plem	0	53	72	20	F- Pipes	0	0	46
6	F-Dor		0	<u> -16</u>	23	21	F- Drain	0	-12	5
7	F-Door		6	24	9	22	F- Pipe	0	-/2	9
8	F-Dor		0	-16	19	23	F- Pump	0	0	5
9	F- Pumi	5 (39)	3	0	16,675	24	F- Pum	0	-32	23
10	F-HP DO		0	-28	19	25	F- Tanks	0	0	19
11	F-HPpi	ump P-10B+C	3	-16	23	26	F- Pipe	3	68	9
12	F- Und	er P-10A	3	-24	28	27	F- Tank	0	-52	5
13	F- Surge	e tank (43)	1DB3	Ó	34.766	28	F- Fan F-9/+	0	56	19
14	F- Pum	b m	27		4574	29	F Fan F9-B	3	-20	5
15	F- Fan	F-8A+B	<u>O</u> _	-28	42	30	F-Door FU-19	0	-32	19
Date	Reviewed	?-17-00 RS St	ıpervis	ion:						

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE										
RADIOLOGIC 41 S 41 £ 1 }										
Drawing Showing Survey Points Removable Total Syupe Location Description Removable Total										
# (Results in DPM/100cm ²)	Remo Alpha	vable Beta	Total Alpha		Location\Description (Results in DPM/100cm ²)	Alpha	Beta	Alpha		
31 F- Tank	0	-16	37	61						
32 F- Dean	0	28	19	62						
33 F- Tank	0	-12	23	63						
34 F- DU-17B	3	64	5	64						
35 F- Drain	0	24	9	65		_				
35 F- Drain 36. and of Survey				66		_				
37	<u> </u>			67_						
38	<u> </u>			68						
39				69						
40				70						
41	<u> </u>			71						
42				72_		_				
.3				73						
-4				74						
45				75						
46				76_	\					
47				77		_				
48				75						
49				79						
50				80						
51				81						
52				82	,					
53				83	1					
54				84	1					
55				85						
56				86	1					
57				87	1					
			\	88						
59				89						
60.				90						



Date Reviewed $\mathcal{A}\cdot \mathcal{3}$ - 00 RS Supervision

		ROCKY FLA	TS E	'NVIR	ONM	ENT	AL TECHNOLOGY SITE	E		
<u> </u>		STRUMENT DAT					Cantaminatio			
_	Eberline			fg <u>NeT</u>			vey Type Contaminatio	<u>n</u> _	·	
	lel Sac-4	Model Sac-4		odel Elec			$\frac{1}{1}$ $\frac{707}{1}$. 7		
	al # 849		_			i	11011 <u>2100222 0 70 0</u>		terizat	
		Cal Due 5-/7-00				Purp	OSE NECOMMAISANCE DEVEL	Uai ac	lti wat	ЮП
	03 cpm				-	RW	P# 00-707-/20	ο4_		
	ciency 33%		_	ficiency.		' 	X 11			
	A 139 dpm	·		DA <u>58</u>	∝ dpn	Dat	e <u>2-/0-00</u> Time _	/60	<u> </u>	
	g <u>Eberline</u> del BC-4	Mfg <u>Eberline</u> Model BC-4		odel						
	$\frac{BC-4}{833}$		_	rial #						
		Cal Due <u>4-12 00</u>	_		Xa		,			
		Bkg <u>48 ym</u>			/\					
	ciency 25%		-	fictency_	$\overline{\lambda}$	RCT	Print name / Signatu	re	/ Emp	n #
B		MDA 1065 6pm	_				Trint hante / Digitata		/ كىنىد	<i>)</i> 11
		ng / Walls > 2 met			survey	points				
		nd swipes See n				.				-
				SU	RVEY	RESU	LTS			
Swipe #	Location\Desc (Results in DPM/	cription //100cm ²)	Rem Alpha	novable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
\mathbf{D}_1			0	-40	0	16	С	3	0	0
2	w>2		0	-24	0	17	С	3	-12	15
3	(~ >2		0	24	-5	18	С	0	0	10
4	ω >2		0	0	-/5	19	С	0	-20	-5
5	ω>2		3	0	0	20	C	0	-12	0
6	w >2		0	40	0	21	C	3	4	0
7	w 72		0	-20	-5	22	C	0	20	0
1	w>2		0	-4	-5	23	C	9	-36	0
9	w>2		0	-20	-5	24	С	0	16	-10
10	W>2		0	32	-/0	25	C	0	.14	-15
11	w>2		0	28	-19	26	C	0	20	34
12	w>2		0	12	-15	27	C	0	8	0
13	С		0	-56	-5	28	C	0	84	0
14	С		3	8	10	29	С	0	12	-/0
25	<u>C</u>		0	-36	15	30	C	0	-40	-19
Date	Reviewed.	<u> </u>	ıpervis	ion.						



SURVEY PACKAGE TRACKING FORM

Package ID 99-0002		Building 707							
Survey Area. G		Survey Unit N/A							
Initiator/ Date	Release Date	Validation Date	Closure Date						
A 10/25/99	9) 12/21/49	KDM 4/24/00	d 4/27/00						

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3		
Survey Area G Sur		Survey Unit N/A	Survey Unit N/A		Area (m²) 640	
Survey Unit Description North East corner of room 220, 2 nd floor of Building 707 Area is North of Column D-14 and East of Column G-13 Building 707 radiological areas are posted as fixed contamination areas						
Survey Type			Classification			
RLC Survey X	RLC Survey X FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown X	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
30	55	45	0	0	55	
Building	Building Type		Survey Area			
Survey Unit			Area (m²)			
Survey Unit Description						
Survey Type			Classification			
RLC Survey 🗆	RLC Survey □ FSS □		Class 1 □ Class 2 □ Class 3 □ Unknown □			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
		I		C		
Building		Туре		Survey Area		
Survey Unit		Туре	Area (m²)	Survey Area		
	cription	Туре	Area (m²)	Survey Area		
Survey Unit	cription	Туре	Area (m ²) Classification	Survey Area		
Survey Unit Description Survey Type RLC Survey	FSS 🗆		Classification Class 1 Class		Jnknown □	
Survey Unit Survey Unit Desc		Equipment Surface Activity Measurements	Classification		Jnknown □ Surface Activity Scans	
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface	Classification Class 1 Class	2 □ Class 3 □ U	Surface Activity	
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface	Classification Class 1 Class	2 □ Class 3 □ U	Surface Activity	
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements	FSS Biased Surface Activity	Equipment Surface Activity Measurements	Classification Class 1 Class	2 Class 3 U Volumetric Samples	Surface Activity	
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples	2 Class 3 U Volumetric Samples	Surface Activity	
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples	2 Class 3 U Volumetric Samples	Surface Activity	
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description Survey Type RLC Survey RLC Survey	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples Area (m²)	2 Class 3 U Volumetric Samples Survey Area	Surface Activity	
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description Survey Unit Description	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples Area (m²)	2 Class 3 U Volumetric Samples Survey Area	Surface Activity Scans	

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707	
Survey Area: G	Survey Unit N/A	
Survey Unit Description: NORTH EAST CORNER OF ROOM 220, 2 ND FLOOR OF BUILDING 707 AREA IS NORTH OF COLUMN D-14 AND EAST OF COLUMN G-13 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS		
Building Information:		
Survey Type Reconnaissance Level Characterization Survey X Final Status Survey □		
Building Type Type 1 Type 2 Type 3 X		
Classification Class 1 Class 2 Class 3 Un	known X	
Contaminants of Concern Plutonium X Uranium X	Other	
Justification for Classification: N/A		
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads		
Special Safety Precautions: Access to overhead Review RWP requirements and surveys prior to overheads Special security requirements for access to overhead security requirements.	entry Use caution when working in	
Isolation Controls:		
Level 1 Level 2 N/A X		
Labeling Requirements: NONE		
Survey Package Implementation:		
	2 2 44	

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Package ID: 99-0002		Building 707		
Survey Area: G		Survey Unit. N/A		
			floor of Building 707 Area is North of cal areas are posted as fixed contamination	
	Mınımum Survey/Samplıng	Measuren	nent Requirements	
Measurement	Number and Type		Comments	
Surface Activity	FLOORS/WALLS < 2 meters		SEE NOTE 1	
Measurements	30 <u>unbiased</u> survey points uniformly d throughout the area	ıstrıbuted	SEE NOTE 2 SEE NOTE 3	
	25 <u>biased</u> survey points at the following locations	ıg	SEE NOTE 4	
	- Points around floors adjacent to a contaminated equipment (where a such as glycol P-traps (plenums), pumps, cathene system, etc	accessible)		
	- Point near each airlock to the plea	nums		
	- Near waste drum storage			
	- Rooms 221, 222, 223, and mainted cage area Physics Change \$5	enance		
	- Other areas of potential concern to RCT judgement/experience	pased on		
	CEILINGS/WALLS > 2 meters			
	30 biased surveys (divided evenly bet and ceiling when possible) with focus following areas			
	- Walls behind process lines			
	- Tops/sides of plenums			
	- Stained or discolored areas	:		
	- Areas around pipe or other penet	rations		
EQUIPMENT		ı		
	45 <u>biased</u> survey points on equipment or more samples from	with one		
	- Equipment which has visible lead contained spills beneath them	s or		
	- Survey points at exhaust ducts			
	- 5 survey points on top of overhe (where locations are accessible)			
	- Fixed equipment in maintenance	cage High oo	Charge #5	
	- Other areas of potential concern RCT judgement/experience		J	

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Package ID: 99-0002		Building 707		
Survey Area: G		Survey Unit N/A		
			floor of Building 707 Area is North of ical areas are posted as fixed contamination	
	Mınımum Survey/Samplıng	Measurer	ment Requirements	
Measurement	Number and Type		Comments	
Surface Scanning	FLOORS/WALLS < 2 meters 55 1 m² surface scans shall be taken at location identified for non-scan surface measurements. Locations found above DCGL shall be documented. CEILINGS/WALLS > 2 meters. NONE EQUIPMENT	e activity	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4	
Media Samples	NONE NONE (2 nd Floor of 707 does not have painted	i floors)		
Volumetric Samples	NONE			
Isotopic Gamma Scans	NONE			

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Pa	ckage ID: 99-0002	Building [,] 707
Su	rvex Area: G	Survey Unit N/A

Survey Unit Description: North East corner of room 220, 2nd floor of Building 707 Area is North of Column D-14 and East of Column G-13 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alphathen beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

Rev 9/99

Package ID: 99-0002	Building 707
Survey Area: G	Survey Unit N/A

Survey Unit Description: North East corner of room 220, 2nd floor of Building 707 Area is North of Column D-14 and East of Column G-13 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

NOTE 1. Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

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Package ID: 99-0002

Building 707

Survey Area G

Survey Unit N/A

Survey Unit Description: North East corner of room 220, 2nd floor of Building 707 Area is North of Column D-14 and East of Column G-13 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building 707
Survey Area: G	Survey Unit N/A

Survey Unit Description. North East corner of room 220, 2nd floor of Building 707 Area is North of Column D-14 and East of Column G-13 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4- Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
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 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99	9-0002	Building, 707			
Survey Area.	G	Survey Unit N/A		The state of the s	1
Change #	Description		Initiator/ Date	PRE	
1	Added page GA		9/1 12/21/99	ABE.	0/
_2	Deleted est to dieset	Scar beta mens.	12/2/19	MAR	1
2	Replaced og 6 to de le	le prefer	00/11/00	APRE	
3	Replaced po 6A (news	ed)	10/18/00	ATSE	
4	replaced pd/9 with pages to add used maps and comp	9 through 9H leted survey both	19/200/29/00	MI	ļ
5	Deleted muntenance cage measu	rement regumenants	Bay 4/24/00	b	
	due to inaccessibility, also dela				
	for Rooms 221, 227 \$ 223	U			
	V				
					ļ
		· · · · · · · · · · · · · · · · · · ·			1

Rev 9/99

SURVEY PACKAGE VALIDATION CHECKLIST FORM

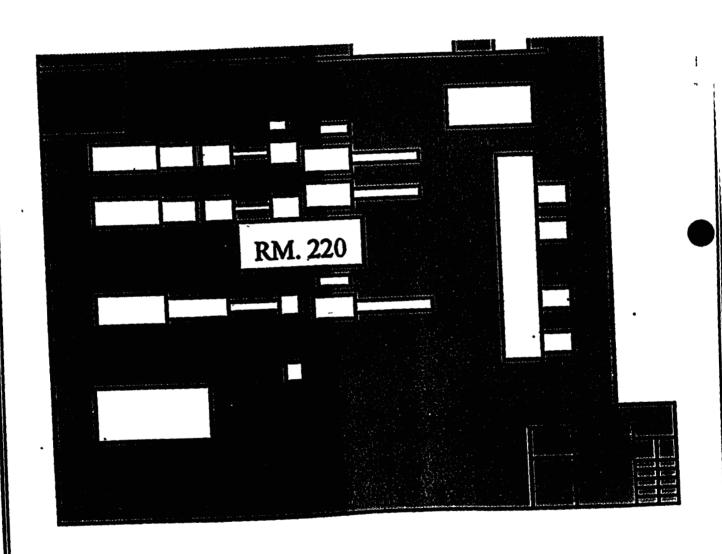
Package ID: 99-0002	Building 707	
Survey Area: G	Survey Unit N/A	
Survey Type: Reconnaissance Level Characterization	Survey X Final Status Sur	vey 🗆
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys	1	EOM
Total Activity Surveys	1	EM
Exposure Rate Surveys	N/A	N/A
Removable Surveys	1	EM
Media Samples	N/A	N/A
Volumetric Samples	N/A	N/A
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys	1	EM
Total Activity Surveys	1	EM
Exposure Rate Surveys	N/A	N/A
Removable Surveys	1	EM
Media Samples	N/A	N/A
Volumetric Samples	N/A	N/A
Comments All survey pts identified Roads 221, 222, 223 ARE NOT ALLIGENTALLY Kisted IN this ARTA.		AND WERE

Tage superceded \$ 2/29/00 Change #4

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Mfg	Mfg	Mfg		Survey Ty	pe:			
Model	Model	Model		Building.				
Serial #	Serial #	Serial	#					
Cal Due	Cal Due		ıe	Purpose				
Bkg		Bkg _						
Efficiency	Efficiency	Efficie	encv	RWP#	· · · · · · · · · · · · · · · · · · ·			
MDA	MDA \				**************************************			
				Date		Time		
Mfg	Mfg	Mfg.						
Model	Model	Model		RCT		/		1
Serial #	Serial #	Serial	#	P	rint name	Signat		Emp #
Cal Due	Cal Due		ie			6		2311P 11
Bkg	Bkg					/		/
Efficiency	Efficiency	Efficie	ency		rint name	Signat	ure	Emp #
MDA		MDA		_				
PRL #:								
REMOVABLE Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRPCT Beta DPM/100 on²	REMOVABLE Alpha DPM/100 cm² 26 27 28 20 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIREC Beta DPM/100	1
21 22 23 24 25				46 47 48 49 50		\		
Date Reviewed:	R	S Supervision		unt Name		Signature		Finn #

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



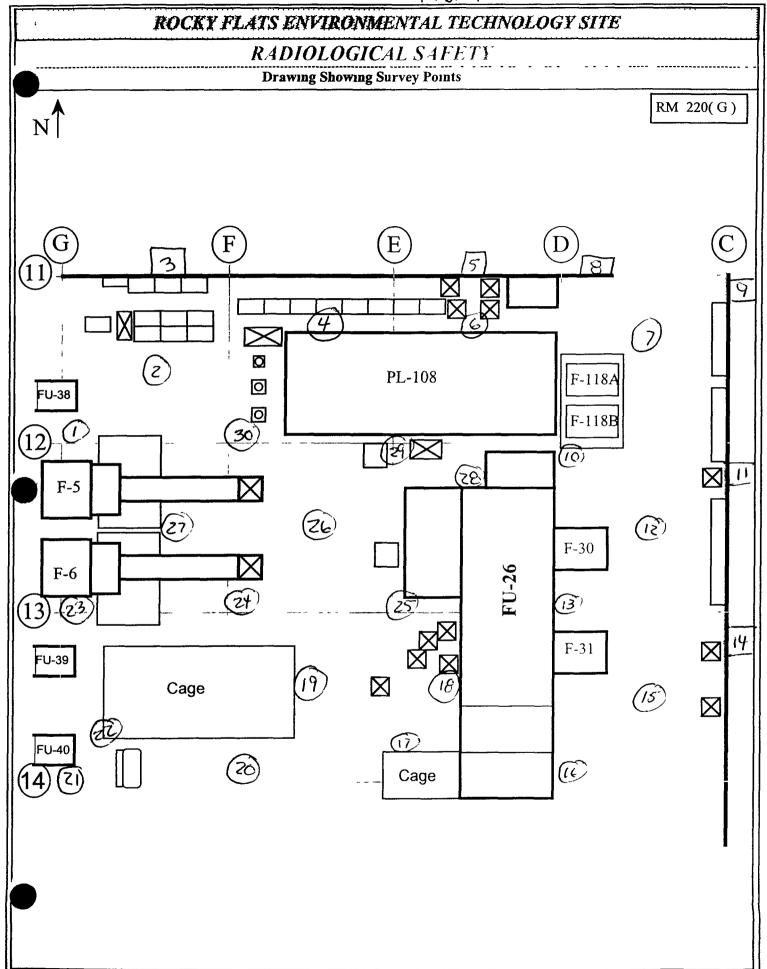
Rev. 05/98

			(S	Survey	Area I	ekg Pa	nge 9 of 9	<u>a</u>)	RS	FORM	AS 07.0	02-01
	ROCKY	FLAT	S BA	VVIR	ONM	ENT	AL TECH	NOLO	GY SITE	;		
	INSTRUMEN	T DATA										
fg Eberlin	e Mfg Ebe	rline	Mfg	NeT	ech	Sur	ey Type _	Conta	minatior	1		
odel Sac-4	Model Sa	c-4	Mod	lel Elec	tra	Build						
Serial # <u>84</u> °	<u>1</u> Serial #_ 8	337	Seri	al # <u>32</u>	265	Loca	tion <u>Roo</u>					
Cal Due <u>'+ -{</u> C	<u>-</u> ₩ Cal Due <u>5</u>	-17-00	Cal	Due <u>7</u>	~3-00	Purpo	ose Reco	nnaisan	ce Level C	Charac	terizati	on
Bkg <u>0.3 </u> と	om Bkg <u>oz</u>	cym	Bkg	2.0	cpm		_		.	. 1		
Efficiency 33%	6 Efficiency	33%	Effic	ciency_	21.019	RW	P#	5 - 10	1-120	9		
MDA <u>13 9</u>	DPm MDA 17	9 DPm	MD.	A <u>414</u>	S 0Pm	Date	2-8	- CO	Time	13	30	
Mfg <u>Eberl</u>	me Mfg Eber	rline	Mfg			,						
Model BC-4	4 Model BC	2-4	Mod	lel								
Serial #_BC-	833 Senal # BC	-872	Seria	al #//								
Cal Due <u>7-1</u>	1 co Cal Due 4	-12-00	Cal l	Due $\frac{I}{\angle}$	K							
Bkg <u>43 د</u> ز	em Bkg 47 a	chw	Bkg	\bot		RCT						
Efficiency 2:	5% Efficiency	25%	Effic	ency_		KCI	Print na	me /	Signatur	-е	/ Emp	#
MDA 101.3	orm MDA 105	5.5 ppm	MD	Á					G			
Comments _	Floor / Walls < 2	meters	Unl	orased	survey	points	5					
1 m ² scans	, 1 minute pats ar	nd swipe	s S	See ma	p for l	ocatio	ıs					
				SUI	RVEY	RESU!	LTS					
Swipe Location	n\Description		Remo	vable	Total	Swipe	Location\D	escription			ovable	Total
4 (Results ii	n DPM/100cm ²)	A	lpha	Beta	Alpha	#	(Results in DI	PM/100cm ²	²)	Alpha	Beta	Alpha
1 F				-16	19	16	F	<u> </u>		3	-12	-5
2 F)	-48	45	17	F			3	-4	0
2 47	(21) -> FI	, ()	-40	10	10				3	-20	10

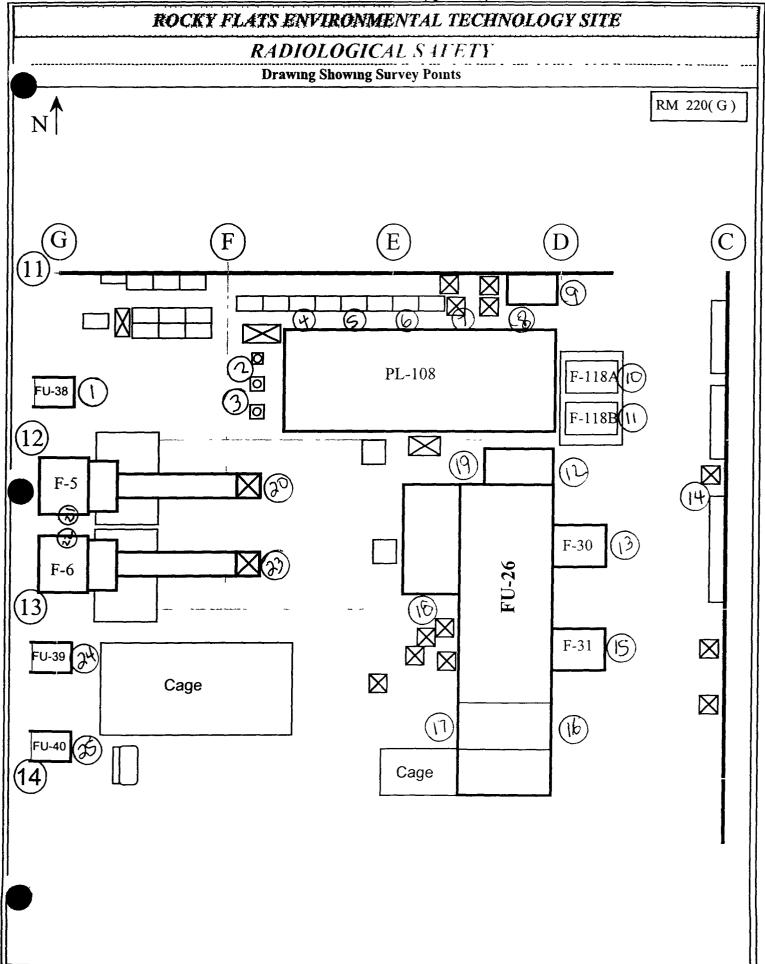
Swipe	Location\Description		ovable	Total	Swipe	Location\Description		ovable	Total
" # <u>`</u>	(Results in DPM/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
\mathbf{D}_1	Ë	0	-16	19	16	F	3	-12	-5
2	F	0	-48	5	17	F	3	-4	0
3	42 G11 → F11	0	-40	10	18	F	3	-20	10
4	F	0	0	15	19	F	C)	4	-10
5	42 E11 + D11	0	-8	10	20	F	3	40	Ċ
_6	F	0	-8	O	21	F	C	<u>-8</u>	0
7	F	0	-8	5	22	F	0	-16	10
8	~2 D11 → C11	6	-16	-5	23	F	_3	4	10
9	<2 C11 → C12	0	-20	-5	24	F	\mathcal{O}	-8	-5
10	(=	0	57	0	25	F	3	0	15
11	<2 C12 → C13	0	0	-5	26	F	\Diamond	-24	O
12	F	0	40	10	27	F	0	20	24
13	F	<i>C</i> ,	-36	-10	28	F	\circ	-40	10
4	LZ C137 (14	0	40	O	29	F	0	2	38
5	F	3	16	-5	30	F	0	44	Ø

Date Reviewed: 2 17 00 RS Supervision

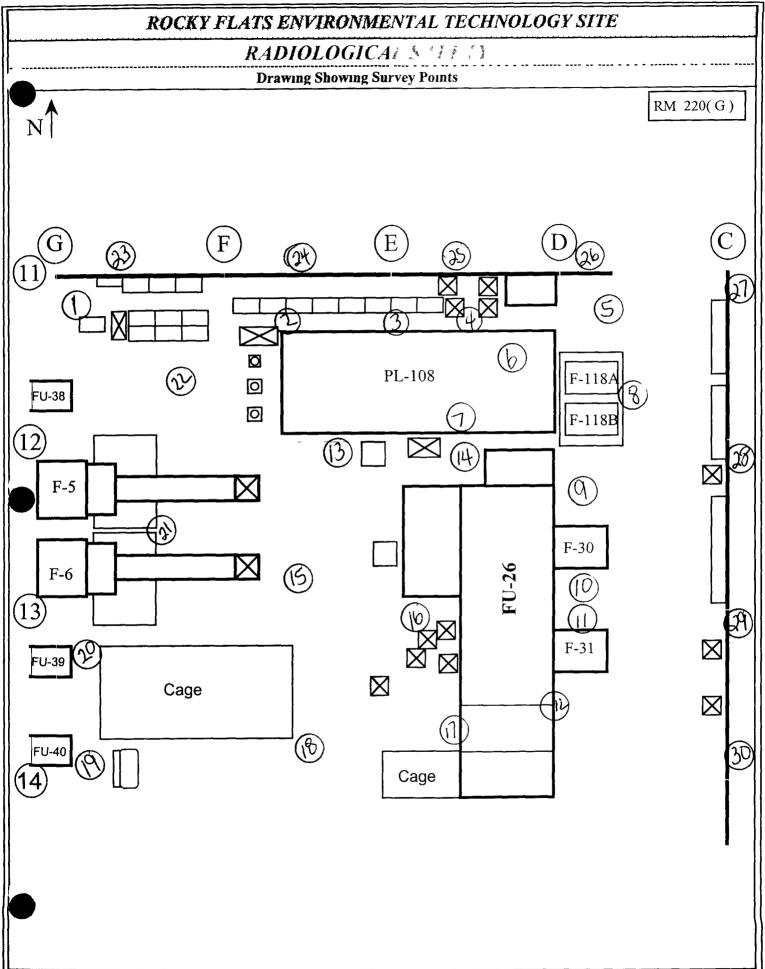
Print Name Signature



		ROCKY FLA	TS E	NVIR	ONM	ENT	AL TECHNOLOGY SITE	E		
	IN:	STRUMENT DA				,	Contoniustic			
_	Eberline	Mfg Eberline	_	g NeT			vey Type Contaminatio	<u>n</u>		
	lel Sac-4						ling 707 tion <u>Room 220</u> (<i>C</i>	,)		
Cal	Due 4-10-00	Cal Due 5-17-0	⊃ Ca Σ	1 Due 6	-29~1	Purn	Reconnaisance Level (Charac	terizat	ion
		Bkg Ort cr								
		Efficiency 33%					P# <u>00-707-1204</u>			
		MDA 14.8					e 2-9 00 Jume _	150	0	
-		Mfg Eberline	-	ġ	/		721			
		Model BC-4	-	odel						
•		Serial # 872		91						
		Cal Due 4-12-08 Bkg 48 cem	-	, –						
						RCT	Print name / Signatu		/ Emp	
MD	A /013	Efficiency 25% MDA 106,5	Dem Ma	SA			rint name / Signatu	16	/ Emp) #
		/ Walls < 2 meter				oints				
_1:	m ² scans, 1 mi	nute pats and sw	ipes	See ma	p for l	ocatio	ns			
						- 		_=_=		
				<u>SU</u>	RVEY	RESU	<u>LTS</u>			
Swipe #	Location\Description (Results in DPM/		Rem Alpha	novable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	F		3	/6	19	16	F	0	48	9
2	F		0	+/6	0	17	F	0	12	19
3	F		0	-4	23	18	F	0	-24	28
4	F	•	0	12	0	19	F	0	52	37
5	F		6	-4	5	20	F	0	-12	23
6	F		0	+20	23	21	F	0	36	14
7	1-		0	-24	14	22	F	3	72	14
8	F		0	0	5	23	F	0	-12	14
9	F		0	-8	19	24	F	0	8	5
10	<u> </u>		0	-28	32	25	F	0	-12	19
11	F		0	28	14	26	end of Sura	ij		
12	F		0	-12	9	27		,		
13	<u> F</u>		3	32	9	28	A			
4	F		0	-16	19	29				
15	F		6	-12	9	30				
Date	Reviewed &	(- 7-00 RS Su	ıpervis	ion _						



		ROCKY FLA	TS E	NVIR	ONM	ENT	AL TECHNOLOGY S	ITE		
		STRUMENT DAT				·· -	vey Type Contamina	tion		
_	Eberline	Mfg Eberline	-	g NeT			vey Type Contamination Contami	11011		
	el Sac-4	Model Sac-4 Serial # 837	_	del Elec		Loca	tion Room 220	(1)		
	- ,	Cal Due 5-17-0							terizat	ion
	O O CPM									
Effic	eiency 33%	Eff	TOPE	.	ገለ ፣ ጋን	/IRW	P# <u>00-707-120</u>)4		
MD	4 8,2 vem	MDA _///	ipm MI	DA <u>4</u>	5.00	Date	= 2-14 DO Tipo	= 16	20	
Mfg	Eberline	Mfg Eberline	Mf	g		1				
	lel BC-4	Model BC-4			\angle	RCI	Ketlow A.	XX		
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		Cal Due <u>4-(2-0</u>		/—						
•		Bkg 46 com Efficiency 25%		ciency		RCT	SCloud SP Print name / Sign	Cloud		
•		MDA					Print name / Sign	ature	/ Emp) #
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1		d swipes See r								
<u> </u>										
			·	<u>SU</u>	RVEY	RESU	<u>LTS</u>	·		,
Swipe	Location\Desc	ription		ovable	Total	Swipe			novable	Total
#	(Results in DPM)	/100cm²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
1	C		0	-20	29	16	C	- O	14	19
2	C		0	32	29	17	C	6	28	10
3	С		3	40	29	18	С	0	12	24
4	C		0	4	24	19	C	0	28	29
5	C	[0	-12	15	20	C	0	56	29
6	C		0	8	70	21	C	0	-8	29
7	С		3	40	10	22	C	0	0	15
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9	С		0	4	10	24	フ こ	\overline{b}	28	10
10	С		0	0	19	25	72	Ó	40	15
11	С		0	4	24	26	>2	0	24	10
12	C		0	32	29	27	72	0	12	19
13	С		0	-4	10	28	>2	0	-16	19
14	C		0	40	29	29	72	0	56	10
3	C		0	36	34	30	>2	0	48	24
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Date		1-1100 KS St	-hei 112			int Nar				

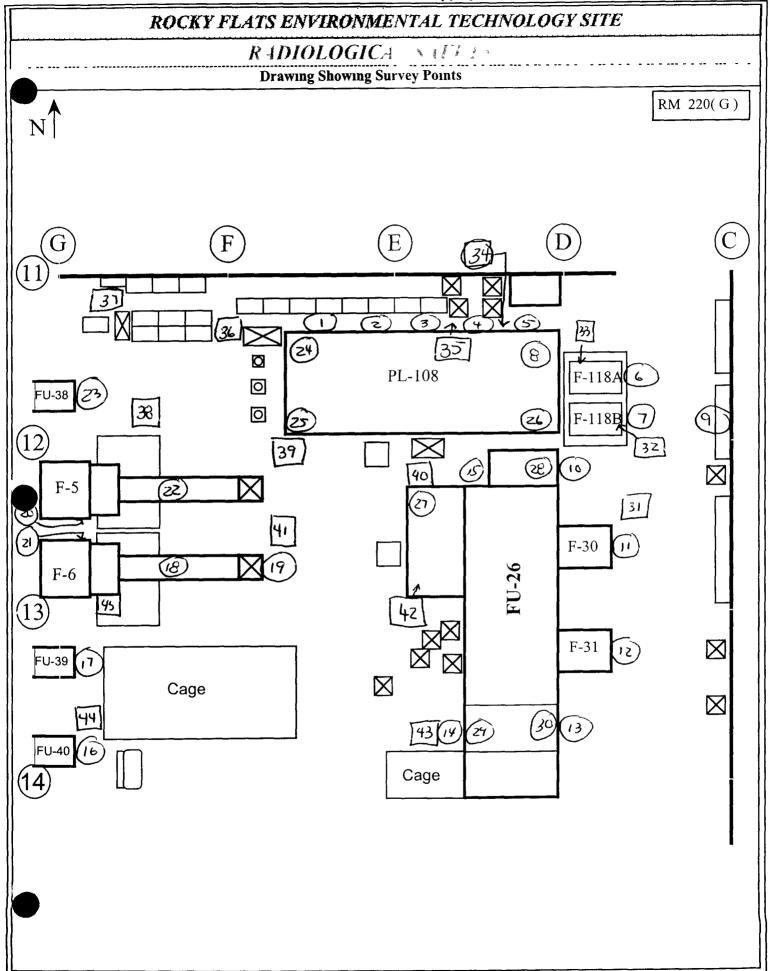


		ROCKY FLA	TS E	NVIR	ONM.	ENT	AL TECHNOLOGY	SITE
		STRUMENT DA				7 -	Contomin	ation
_		Mfg Eberline		g <u>NeT</u>			vey Type Contamin	ation
	el Sac-4	Model Sac-4		del Elec			ling 707	(6)
Seria	1 # <u>849</u>	Serial # 83 /	Ser	ral #	<u> 278</u>	Loca	non Room 220	
Call	Oue <u>9-70-0</u> 0	Cal Due 5-1/-0	Cal	Due <u>6</u>	1/2 - C	Purpo	ose Reconnaisance Le	ever Characterization
		Bkg O.Ocpr Efficiency 33%		iciency			P# <u>00-707-120</u>)4
16		MDA 8,20						
		_				Date	2-16-00 gir	ne <u>/030</u>
Mfg		Mfg Eberline						
		Model <u>BC-4</u> Serial # <u>872</u>		ral #/2				
		Cal Due 4-12-12						
		Bkg 46 cpm	731			D.C.T	,	
		Efficiency 25%	Eff	g iciency <u>a</u>	20.63	RCT	Print name / Si	gnature / Emp #
MD.	A 100 30P	MDA <u>/04.5</u>	OPMAI)A				Silver , Billy II
		ment Brased su						
		d swipes See r	nap for	r locatio	ons			
	$\frac{31-45}{100} > 3$	meters Leguipmen	+ 20	ma	اما ه	C	Carro	
	NO FIXED	- Equipmen	7.1 (K.F		RVEY			
Swipe	Location\Descr		Rem	ovable	Total	Swipe	I agation\Decounting	Removable Total
#	(Results in DPM/	100cm ²)	Alpha	Beta	Alpha	#	Location\Description (Results in DPM/100cm ²)	Alpha Beta Alpha
	Door	PL-108	3	12	19	16	FU-40	02814
2	Door	PL-108	0	12	23	17	FU-39	0/2/14
3	Door i	PL-108	0	-12	23	18	Duct	0 0 19
4	Door F	>L-10B	0	8	14	19	Duct	0 -32 46
5	Door P	L-108	0	-16	28	20	'Joer	0823
6	FAN F	-118 A	0	-50	28	21	Door	3 -16 23
7	FAN F	-118 B	ر ر	~8	9	22	Duct	6 -20 19
8	Door Pi	=108 =U-26 sq	1)	-58	S	23	Fu-38	0 0 23
9	- Elect	tanel spa	0	0	5	24	Top PL-108	3 -36 10
10	Door 1	FU-26	0	20	5	25	Top PL-108	6 24 5
11	FAN F	30	0	-8	14	26	Top PL-108	0 -28 5
12	FAN F	-31	0	-36	19	27	TOP F 4-76	3 0 39
13	Door		0	-48	9	28	Top Fuzb	3 8 15
14	Door		0	-28	14	29	TUP FU-26	3 -8 10
5	Door		0	124	4	30	TOD FU-26	6 0 14
Date	Reviewed 6	<u>) 17 00</u> RS Si	ıpervis	sion _	4			

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SALE IS

						Points			
ipe	Location\Description (Results in DPM/100cm ²)		vable	Total Alpha	Swipe	Location\Description (Results in DPM/100cm ²)	Remo	ovable Beta	Total Alpha
31	Duct	O	-12	19	61	(Results in Di 149 100cm)			
32		3	4	19	62				
33	Top F-118 B Top F-118 A	3	4	29	63				
34	Duct	0	-12	19	64				
35	Duct	0	16	24	65				
36	Duct	0	0	S	66				
37	Dact	0	-8	24	67				
38	Duct	0	4	15	68				
39	Duct	3	12	5	69				
40	Duct	6	28	15	70				
41	Duct	3	32	15	71				
42	Top Fu-26	0	16	15	72				
13	Duct	9	-16	39	73	**			
4	Duct	q	20	24	74		ļ		
45	Duct	<u>b</u>	48	0	75		<u> </u>		
46	END of Survey				76	\ \ \	ļ		
47	7				77	\			
48					75				
49					79		\		
50					80		<u> </u>		
51					81		 \		
52					82		<u> </u>		
53	No.				83		-	`	
54					84	•			
55					85		-	,	
56		1			86_				
57					87				
8			1		88				
59					89				
60					90		<u> </u>	L	<u></u> _



SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002		Building 707						
Survey Area H		Survey Unit N/A						
Initiator/ Date	Release Date	Validation Date	Closure Date					
Of 10/25/09	(12/21/99	d- 1/27/11	do 4/27/00					
	111 77	d 4-27-00						
-								
1-104-4								

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	0002	Building 707		Type 3			
Survey Area H		Survey Unit N/A	<u> </u>	Area (m ²) 640			
				ding 707 Area is Nas fixed contaminat			
Survey Type			Classification				
RLC Survey X	FSS □		Class 1 □ Class	2 □ Class 3 □ Unknown X			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
30	55	45	0	0	55		
Building		Туре		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type			Classification				
RLC Survey □	FSS □		Class 1 □ Class 2 □ Class 3 □ Unknov				
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре		Survey Area			
Building Survey Unit		Туре	Area (m²)	Survey Area			
	cription	Туре	Area (m²)	Survey Area			
Survey Unit	cription	Туре	Area (m ²) Classification	Survey Area			
Survey Unit Desc	FSS 🗆	Туре			Jnknown □		
Survey Unit Desc		Type Equipment Surface Activity Measurements	Classification		Jnknown □ Surface Activity Scans		
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface Activity	Classification Class I □ Class	2 Class 3 U	Surface Activity		
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface Activity	Classification Class I □ Class	2 Class 3 U	Surface Activity		
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements	FSS Biased Surface Activity	Equipment Surface Activity Measurements	Classification Class I □ Class	2 Class 3 U U Volumetric Samples	Surface Activity		
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building	FSS Bussed Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 □ Class Media Samples	2 Class 3 U U Volumetric Samples	Surface Activity		
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit	FSS Bussed Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 □ Class Media Samples	2 Class 3 U U Volumetric Samples	Surface Activity		
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description	FSS Bussed Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class	2 Class 3 U Volumetric Samples Survey Area	Surface Activity		
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class	2 Class 3 U Volumetric Samples Survey Area	Surface Activity Scans		

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707								
Survey Area: H	Survey Unit N/A								
Survey Unit Description: NORTH WEST CORNER OF ROOM 220, 2 ND FLOOR OF BUILDING 707 AREA IS NORTH OF COLUMN K-14 AND WEST OF COLUMN G-13 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS									
Building Information:	Building Information:								
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey □								
Building Type Type 1 🗖 Type 2 🗖 Type 3 X									
Classification Class 1 🗆 Class 2 🗖 Class 3 🗆 Un									
Contaminants of Concern Plutonium X Uranium X	Other 🗆								
Justification for Classification: N/A									
Special Support Requirements: Ladder, manlinstrumentation may be required for access into									
Special Safety Precautions: Access to overhead Review RWP requirements and surveys prior to overheads Special security requirements for ac	entry Use caution when working in								
Isolation Controls:									
Level 1 🗆 Level 2 🗖 N/A X									
Labeling Requirements: NONE									
Survey Package Implementation:									
	2								
	-								
	1								

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Package ID: 99-0002		Building 707				
Survey Area · H	Survey Area· H		Survey Unit N/A			
Survey Unit Description: North West corner of room Column K-14 and West of Column G-13 Building 70 areas						
	Minimum Survey/Sampling	nent Requirements				
Measurement	Number and Type		Comments			
Surface Activity	FLOORS/WALLS < 2 meters		SEE NOTE 1			
Measurements	30 <u>unbiased</u> survey points uniformly d throughout the area	stributed	SEE NOTE 2			
	25 biased survey points at the followin locations	g	SEE NOTE 3 SEE NOTE 4			
	- Points around floors adjacent to in contaminated equipment (where a such as glycol P-traps (plenums), pumps, cathene system, etc	ccessible)				
,	- Point near each airlock to the pler	iums				
	- Near waste drum storage					
	- Rooms 221, 222, 223, and mainte cage area	nance				
	- Stained/discolored areas					
	- Other areas of potential concern b RCT judgement/experience	eased on				
	CEILINGS/WALLS > 2 meters					
	30 biased surveys (divided evenly betwand ceiling when possible) with focus of following areas					
	- Walls behind process lines					
	- Tops/sides of plenums					
	- Stained or discolored areas					
	- Areas around pipe or other penetr	ations				
	EQUIPMENT					
	45 <u>biased</u> survey points on equipment or more samples from	with one				
	- Equipment which has visible leak contained spills beneath them	s or				
	- Survey points at exhaust ducts					
	- 5 survey points on top of overheat (where locations are accessible)	id piping				
I	- Fixed equipment in maintenance of	cage				
	- Other areas of potential concern b RCT judgement/experience	ased on				

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Package ID 99-0002	Building 707
Survey Area· H	Survey Unit N/A

Survey Unit Description: North West corner of room 220, 2nd floor of Building 707 Area is North of Column K-14 and West of Column G-13 Building 707 radiological areas are posted as fixed contamination areas

	M 0 (0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	A D
	Minimum Survey/Sampling Measure	ement Requirements
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters	SEE NOTE 1
	55 1 m ² surface scans shall be taken at each location identified for surface activity	SEE NOTE 2
	measurements Locations found above the	SEE NOTE 3
	DCGL shall be documented	SEE NOTE 4
	CEILINGS/WALLS > 2 meters	
	NONE	
	EQUIPMENT	
	NONE	
Media Samples	NONE	
	(2 nd Floor of 707 does not have painted floors)	
	1000	
Volumetric Samples	NONE	
Samples		
Isotopic Gamma	NONE	
Scans		

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PAGE 6 SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002 Building 707 Survey Unit N/A Survey Area: H Survey Unit Description: North West corner of room 220, 2nd floor of Building 707 Area is North of Column K-14 and West of Column G-13 Building 707 radiological areas are posted as fixed contamination areas **Survey/Sampling Instructions** NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following Direct alpha contamination Direct beta contamination Removable alpha contamination Removable beta contamination 1m² scan measurements for alpha then beta/gamma contamination NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

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Package ID: 99-0002	Building 707				
Survey Area: H	Survey Unit N/A				

Survey Unit Description: North West corner of room 220, 2nd floor of Building 707 Area is North of Column K-14 and West of Column G-13 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

Package ID: 99-0002	Building 707
Survey Area. H	Survey Unit N/A

Survey Unit Description: North West corner of room 220, 2nd floor of Building 707 Area is North of Column K-14 and West of Column G-13 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area
- Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected.
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc

Package ID: 99-0002	Building 707
Survey Area: H	Survey Unit N/A

Survey Unit Description: North West corner of room 220, 2nd floor of Building 707 Area is North of Column K-14 and West of Column G-13 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected.
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4- Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e g, indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID 99-0002 Survey Area: H		Building 707	Building 707 Survey Unit N/A			
		Survey Unit N/A				
Change #	Descriptio	n	Initiator/ Date	PRE		
ı	Added page GA		9) 12/21/99	ME	_ م	
2	Delated of to di	eice / scar beta ma	8 80 12/21/99	OUR -	-10	
2	Replaced DG 6 to elia	munado de Rofé	100 a 1/2/00	ABS	7	
3	Doplaces of Go wi	the Rovised version	On 01/2/00	HE		
4	Replaced pg 6 to elia Replaced pg 6 to elia Replaced pa 6a mi Replaced page 9 mith as pages 9	ew maps and survey through 9H	1/9 02/29/00	MIM		
			7		-	
					-	
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	,				-	
					4	
					4	
				ł	1	

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SURVEY PACKAGE VALIDATION CHECKLIST FORM

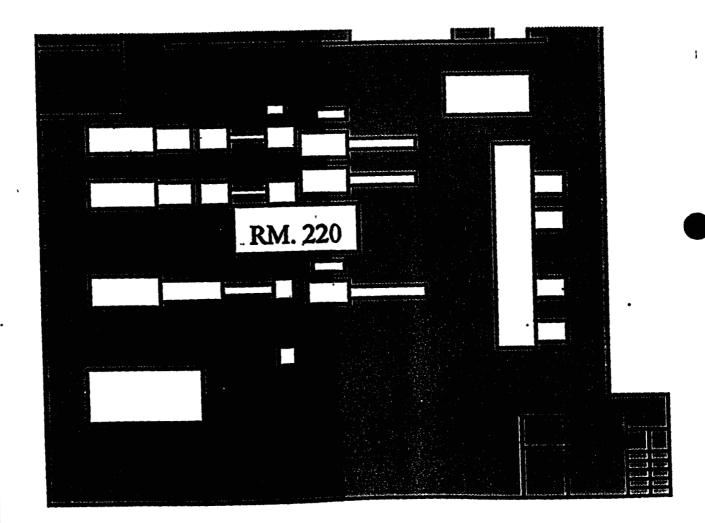
Package ID: 99-0002 Building 707							
Survey Area. H Survey Unit N/A							
Survey Type. Reconnaissance Level Characterization Survey X Final Status Survey □							
All Documentation Reviewed for Completion	RCT Supervisor	PRE					
Scan Surveys	1	l-					
Total Activity Surveys	1	4-					
Exposure Rate Surveys	N/A	N/A					
Removable Surveys	1	d					
Media Samples	N/A	N/A					
Volumetric Samples	N/A	N/A					
All Surveys and Samples Accounted For	RCT Supervisor	PRE					
Scan Surveys	1	8					
Total Activity Surveys	1	do					
Exposure Rate Surveys	N/A	N/A					
Removable Surveys	1	do					
Media Samples	N/A	NA					
Volumetric Samples	N/A	N/A					
Volumetric Samples N/A N/A Comments All survey pts identified on maps:							

Page superceded \$ 3/29/00 Chg #4

	$f_{\mathbf{v}} \in L^{\infty} N^{2} U^{-} f^{2}$	10,900 EMP P	(CONTE	Januand, ma	(C)#IM(0)L;0)(197 <i>\$1500</i>	• • • • • • • • • • • • • • • • • • •	
n	STRUMENT	DATA	.,					
Mfg	Mfg			Survey Tyr	e:			
Model	Model			Survey Type:				
Serial #	Serial #			Location*				
Cal Due	Cal Due							
	Bkg			Turpose				
Bkg	Efficiency			D XX/D #				
Efficiency				KW1 #				
MDA	MDA	—— MDA —		Date		Time		
Mea	Mfa	\ Mfg		Date		1mo		
Mfg Model	Mfg Model	Model		PCT		/	,	
Serial #	Serial #				rint name	Signat	ure Emp #	
	Cal Due			1	I IIIt Haille	Digitati	are Emp #	
Cal Due	Bkg	Carbue		RCT		/	,	
Bkg		Efficience			rint name	Signati	ure Emp #	
Efficiency	Efficiency MDA		·y		I iiit iidiito	Oigilati	are Emp	
PRL#:Comments								
		<u>S</u>	URVEY\	RESULTS				
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Beta DPM/100 cm²	Alpha DPM/100 cm ² DF	Beta PM/100 cm²	Alpha DRM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49	Beta DPM/100 cm²	Alpha DPM/100 cm²	Beta DPM/100 cm²	
25 Date Reviewed:	R	S Supervision:		50		Stonature	/ Emp. #	

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



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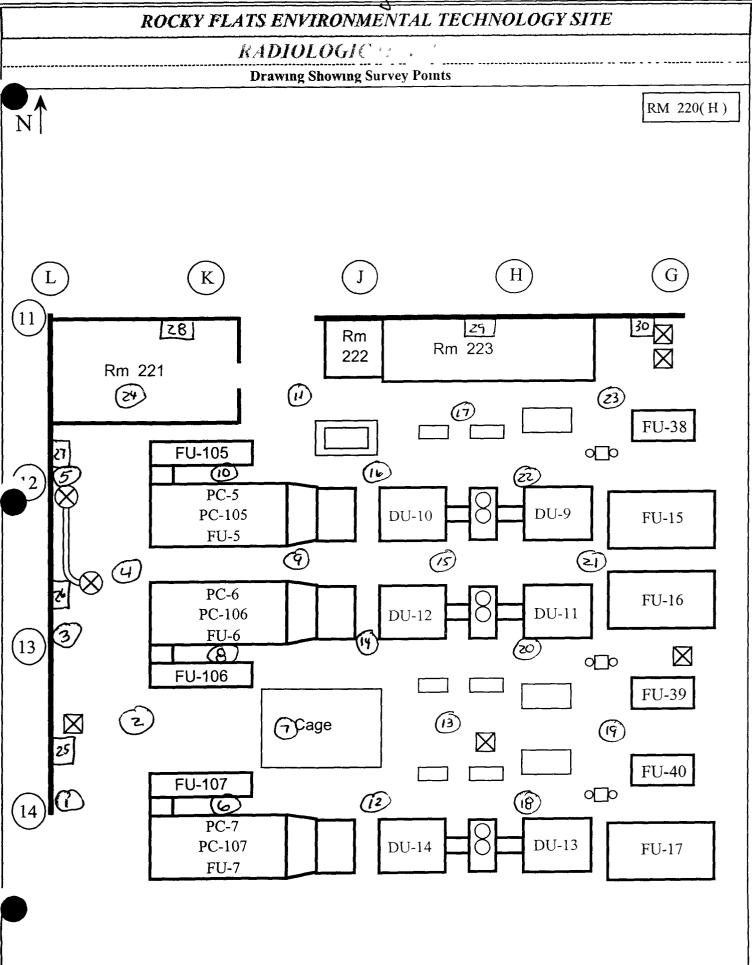
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

IN	STRUMENT DATA						
fg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination				
odel Sac-4	Model Sac-4	Model Electra	Building 707				
Serial #_ 8 4 9	Serial # 837	Serial # 15/8	Location Room 220 (H)				
Cal Due <u>4-10-0</u> 0	Cal Due 5-1703	Cal Due <u>6 39-00</u>	Purpose Reconnaisance Level Characterization				
Bkg <u>03 com</u>	Bkg Oysom	Bkg 30 cpm					
Efficiency 33%	Efficiency 33%	Efficiency 2/86%	RWP# 00 - 707 - 1204				
MDA <u>/39 dpm</u>	MDA 148 dom	MDA <u>493 dpm</u>	Date <u>2-9-60</u> Time //00				
Mfg Eberline	Mfg Eberline	Mfg \					
Model BC-4	Model_BC-4	Model					
Senal # <u>833</u>	Serial # 872	Serial #					
Cal Due <u>7-14 00</u>	Cal Due <u>y-/2-00</u>	Cal Due					
Bkg 43 cpm	Bkg 48 cpm	Bkg/	RCT NA				
Efficiency 25%	Efficiency 25%	Efficiency	Print name / Signature / Emp #				
MDA 10/3 dom	MDA 1065 dam	MDA					
Comments Floor	/ Walls < 2 meters	Unbiased survey	points				
1 m ² scans, 1 m	1 m ² scans, 1 minute pats and swipes See map for locations						
Rm 222	Rm 222 lock, full of Equipment (Notaccessible)						

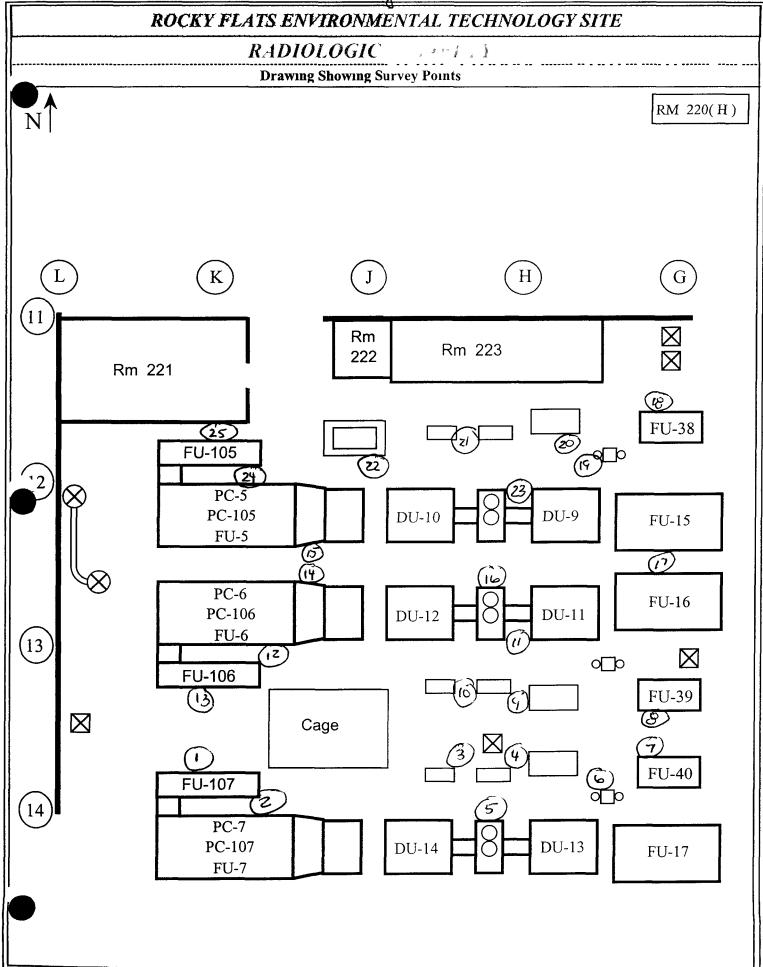
SURVEY RESULTS

Swipe	ripe Location\Description Removable Total Swipe Location\Description Remov					Total			
" #	(Results in DPM/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
1	F	0	24	-10	16	F	0	-4	18
2	F	0	32	10	17	F	0	20	14
3	F	0	52	-14	18	F	3	36	14
4	F	0	-12	5	19	F	0	-/6	0
5	F	3	8	23	20	F	0	0	27
6	F	0	12	-/0	21	F	0	-24	23
7	F	0	8	-5	22	F	3_	8	9
8	F	0	24	23	23	F	3	-&	37
9	F	0	કે ચ	14	24	F	3	8	9
10	F	0	-12	23	25	W<2	6	28	0
11	F	0	20	10	26	W<2	0	-64	-14
12	F	0	-24	0	27	ω<2	0	48	-14
13	F	3	-8	14	28	w<2	0	4	?
14	F	0	56	23	29	W-2	0	20	-9
5	F	0	0	18	30	w<2	0	-32	-19

 $2-2(\cdot 00)$ RS Supervision:

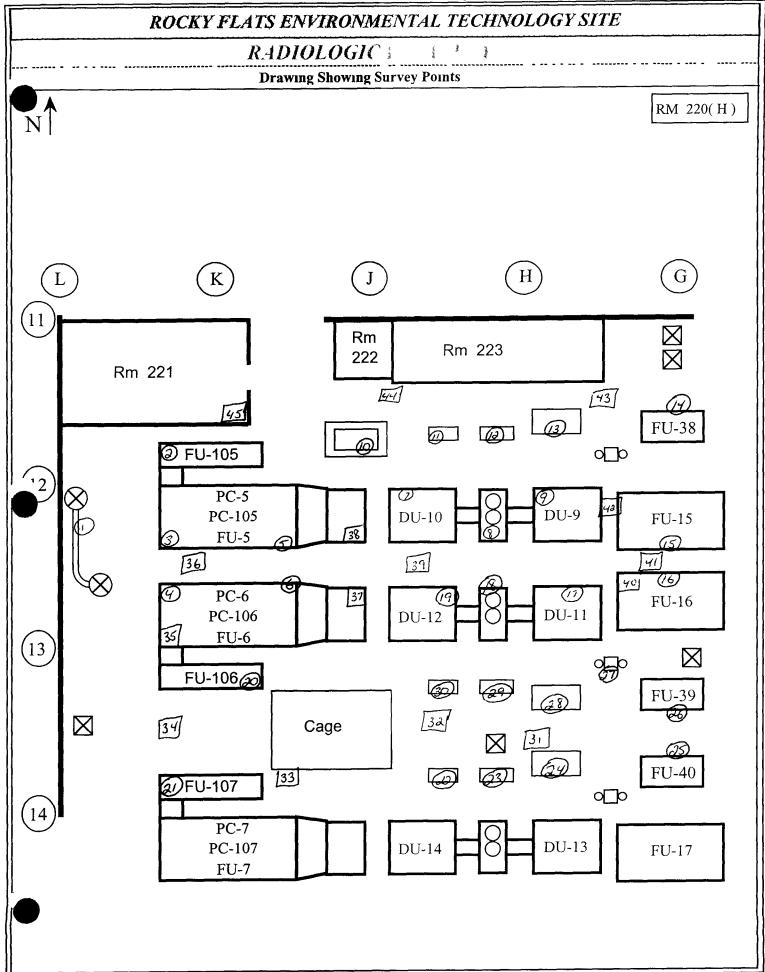


ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE												
	IN	STRUMENT DAT	ΓΑ			,				' 		
fg <u>Eberline</u> Mfg <u>Eberline</u>				g NeT		Survey Type Contamination						
Model Sac-4 Model Sac-4		•	Model Electra Serial # /389			Building 707						
Serial # 8 / 9 Serial # 8 3 7 Cal Due 4-10-00 Cal Due 2. 5-17-00							Location Room 220 (H) Purpose Reconnaisance Level Characterization					
	03 cpm	Bkg 04 cpm		9 20 (32)								
	ciency 33%	Efficiency 33%		fficiency 20 77% RWP # 00-707-1204								
18	A 13 4 dan	MDA 148 dpm		TDA 447 doa								
	V	•			· · · · · · · · · · · · · · · · · · ·	Dat	e <u>2 9 00</u> Time _	7600	<u>)</u>			
, T	g <u>Eberline</u> del BC-4	Mfg Eberline Model BC-4	•	godel								
	al # 833	Serial # 8 7-2		erial #								
	Due <u>7-/4-00</u>			Due _/	X							
18	43 cpm			cg \								
•	ciency 25%			iciency	$-\!$	RCI	Print name Signatu	re	/ Emp	#		
		MDA 1065 dam										
1		/ Walls < 2 meter										
		inute pats and swi						+h-1	1 000	hola		
- K	nased sur	THE IMS 2	1 (2000)	n Kun	1.110	no 1	per RCT judgement lox	MALLA	10	200		
	JASCO SIAI		<u>, , , , , , , , , , , , , , , , , , , </u>		RVEY			para s	4)			
Swipe	Location\Desc	cription	Rem	ovable	Total	Swipe	Location\Description	Rem	ovable	Total		
# #	(Results in DPM		Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha		
	F		0	40	0	16	F	0	-24	14		
2	F		0	-24	10	17	F	0	32	0		
3	F		0	4	10	18	F	0	-60	-10		
4	F		0	8	0	19	F	0	-36	14		
5	F		3	-8	14	20	F	3	-20	-10		
6	F		0	32	10	21	F	0	24	5		
7	F		0	0	0	22	f	3	4	5		
8	F		0	-40	0	23	F	3	-4	0		
9	E		0	0	5	24	F	0	28	-/0		
10	F		3	-16	-5	25	F	6	76	-/0		
11	F		3	36	10	26	End of Survey					
12	F		3	-16	10	27						
13	F		0	-8	-/0	28	AAA					
14	F		3	8	-/0	29	10					
15.	F		0	28	5	30						
Date Reviewed: 22100 RS Supervision												



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE													
INSTRUMENT DATA Contomination													
¹fg	Eberline	Mfg Eberline	Mf	g <u>NeT</u>	ech_	Survey Type Contamination							
			del_Elec		Building 707								
		Ser	Serial #_/389			Location Room 220 (H)							
	Due <u>4-10-0</u> 0	Cal Due <u>5-17-0</u>				Purpose Reconnaisance Level Characterization							
Bkg	U2 cpm	Bkg 00 spm		g <u>00</u>		DW	P# <u>00-707-120</u>	4					
	eiency <u>33%</u>	Efficiency 33%		iciency		H KW	P# <u>00 -70 / - 720</u>	1					
MD	A 12 9 dpm	MDA <u>8 2 dρm</u>	MΙ)A <u>/3 (</u>	O dpm	Date	e <u>2 /6 00</u> Tin	ne <u>/600</u>	2				
Mfg	Eberline	Mfg Eberline	Mf	Mfg Netech									
Mod	del <u>BC-4</u>	Model_BC-4	Mo	Model Electra									
	al # <u>833</u>	Serial # 872	Ser	1al #_ <i>_/a</i>	33								
Cal	Due <u>7-14-00</u>	Cal Due 412-00	Cal	Due <u></u>	11-00								
Bkg	42 cpm	Bkg 46 cpm	Bk	g <u>00</u>	cpm	RCT	•						
Effi	ciency 25%	Efficiency 25%	Eff	iciency,	2063%			nature	/ Emp) #			
MD	A 100 3 dpm	MDA 1045 dpm	MI)A <u>/3 /</u>	dom								
Com	ments Equip	ment Biased sur	rvey p	oınts									
1	minute pats ar	nd swipes See n	nap for	r locatio	ons								
_#	31-45 6>	2 using Electron	#/23	3									
	No Fixed	Eguipment	in	main	<u>teno</u>	nce	Cage						
		5 '		SU	RVEY	RESU	LTS						
Swipe				ovable	Total	Swipe	Location\Description		ovable_	Total			
#	(Results in DPM	/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha			
1.	Duct.	Pipe	3	12	5	16	FU-16	3	40	14			
2	Buct . FU-105		0	-52	5	17	DU-11	0	4	10			
3	Fu-5		0	-56	34	18	PU-11	0	28	10			
4	FU-6		0	-20	5	19	DU-12	0	40	19			
5	FU-5	Door	0	-44	29	20	FU-106	3	0	29			
6	FU-6 D	ì	3	-44	10	21	FU-107	0	-20	34			
7	DU -10		0	-12	5	22	P-107	0	-12	5			
8	PU-10		0	0	14	23	PU-13	3	-28	10			
9	DU -9		0	-20		24	R-7	0	-16	0			
10	J-//		0	8	14	25	FU-40	0	-28	0			
11	P-105		0	4	10	26	FU-39	0	0	14			
12	PU-9		0	-16	14	27	Rok CU-6	0	.1	5			
13	R-5		0	-16	14	28	97 R-6	0	56	19			
14	FU-38		0	-20		29	PU-12	0	-16	34			
5			0	- '/8		30	P-106	3	-16	14			
Date Reviewed 2100 RS Supervision													

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE											
RADIOLOGIC (1 S.41 ET)											
Drawing Showing Survey Points Procession											
# (Results in DPM/100cm ²)	Remo Alpha	Beta	Total Alpha		Location\Description (Results in DPM/100cm ²)	Alpha		Alpha			
31 6>2 Duct	3	64	17	61		<u> </u>		· , -			
32 6>2 Duct	3	8	24	62		ļ		+			
33 672 Wises	0	-32	10	63				/			
34 6>2 Duct	6	32	15	64			/				
35 E>2 FU-6	6	-8	15	65			/_				
36 €>2 Duct	12	-24	24	66		,	/				
37 612 Duct	9	32	15	67		_/					
38 6>2 Dus	9	48	15	68		/					
39 (>2 Duct	0	â8	19	69		/					
40 E>2 FU16	18	-12	102	70	/	1					
41 672 Duct	9	16	10	71	/						
42 672 Duct	0	-4	5	72							
3 672 Duct	12	-28	34	73		-					
4 COD Duct	3	4	0	74_							
45 E72 Duct	12	0	19	75							
46 End of Survey				76							
47				77	/						
48				75	4,/						
49				79	V/A						
50				80							
51				81	/	-					
52				82		ļ					
53				83							
54				84							
55				85							
56				86							
57				87							
				88							
59				89		-					
60				9 0	/						



/ Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE **INSTRUMENT DATA** Contamination **Survey Type** Mfg Eberline Mfg NeTech

1fg Eberline Model Sac-4 odel Sac-4 Model Electra Serial # 837 Serial # 849 Serial # 1233 Cal Due 4-10-00 Cal Due 5-/7-00 Cal Due 5-11-00 Bkg OO com Bkg 0.0 cpm Bkg 0.1 cpm Efficiency 33% Efficiency 33% Efficiency 20.63% MDA 131 dpm MDA 115 don MDA 8.2 don

Mfg\ Mfg Eberline Mfg Eberline Model BC-4 Model \ Model BC-4 Serial # 833 Serial # 872 Serial # Cal Due 7-14 00 Cal Due 4-12-00 Cal Due $\sqrt{2}$ Bkg Bkg 46 40 Bkg 48 pm

Efficiency

707 Building Room 220 Location Reconnaisance Level Characterization Purpose

Signature

RWP# 00 707-1204

Date 2 - 17 - 00 Time $\frac{1600}{}$

MDA MDA 1045 don MDA 1065 dpm Comments Ceiling / Walls > 2 meters Biased survey points

1 minute pats and swipes See map for locations

Efficiency 25%

Efficiency 25%

SURVEY RESULTS

RCT

Print name

Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	
1	w >2	0	-/6	24	16	C	0	-24	19	
2	w >2	0	-36	10	17	C	0	-4	18	
3	W>2	0	20	0	18	C	3	32	10	
4	$\omega 7 \hat{c}$	0	0	15	19	C	0	-20	10	
_5	W72	0	-16	34	20	C	0	-40	29	
6	w>2	0	12	19	21	C	6	36	5	
7	W>2	0	52	19	22	C	0	-40	5	
8	C	0	-20	19	23	C	0	-4	15	
9	C	0	-20	24	24	C	\circ	0	19	
10	С	O	40	15	25	С	0	-4	29	
11	C	3	12	5	26	C	0	િ	24	
12	C	0	24	/5	27	C	0	-12	34	
13	С	3	52	29	28	C	3	4	19	
1 <u>4</u>	С	0	4	19	29	C	0	-60	5	
6 5	C	0	0	19	30	C	0	-32	24	

Date Reviewed 2-1/00 RS Supervision.

SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002 Survey Area: I		Building 707 Survey Unit N/A			
A 10/25/99	12/21/99	EDM 4/13/00	RBM 4/13/60		
	<u> </u>				
		_			

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	0002	Building 707		Type 3		
Survey Area I Survey Unit N/A		A Area (m²) 640				
Survey Unit Description South East corner of room 22 14 and East of Column G-15 Building 707 radiological			20, 2 nd floor of Building 707 Area is South of Column Dareas are posted as fixed contamination areas			
Survey Type			Classification			
RLC Survey X	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown X	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
30	55	45	0	0	55	
Building		Туре		Survey Area		
Survey Unit			Area (m²)			
Survey Unit Desc	cription					
Survey Type			Classification			
RLC Survey □	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown 🗖	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements			Surface Activity Scans	
Building		Туре	-	Survey Area		
Survey Unit			Area (m²)			
Survey Unit Desc	cription					
Survey Type			Classification			
RLC Survey □	FSS □		Class 1 □ Class 2 □ Class 3 □ Unknown □			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building Type		Survey Area				
		Туре		Survey Area		
Survey Unit		Туре	Area (m²)	Survey Area		
Survey Unit Survey Unit Desc	cription	Туре	Area (m²)	Survey Area	2.30	
	cription	Туре	Area (m ²) Classification	Survey Area		
Survey Unit Desc	FSS 🗆	Туре			Jnknown □	
Survey Unit Desc		Equipment Surface Activity Measurements	Classification		Jnknown □ Surface Activity Scans	

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building 707			
Survey Area: I	Survey Unit· N/A			
Survey Unit Description: SOUTH EAST CORNER AREA IS SOUTH OF COLUMN D-14 AND EAST OF CAREAS ARE POSTED AS FIXED CONTAMINATION	COLUMN G-15 BUILDING 707 RADIOLOGICAL			
Building Information:				
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey			
Building Type Type 1 Type 2 Type 3 X				
Classification Class 1 Class 2 Class 3 Un				
Contaminants of Concern Plutonium X Uranium X	Other 🗆			
Justification for Classification: N/A				
Special Support Requirements: Ladder, manlinstrumentation may be required for access into	•			
Special Safety Precautions: Access to overhead Review RWP requirements and surveys prior to overheads Special security requirements for ac	entry Use caution when working in			
Isolation Controls:				
Level 1 □ Level 2 □ N/A X				
Labeling Requirements: NONE				
Survey Package Implementation:	1			

Package ID: 99-0002		Building 707		
Survey Area: I		Survey Unit N/A		
Survey Unit Description: South East corner of room 22 Column D-14 and East of Column G-15 Building 707 rad areas		n 220, 2 nd floor of Building 707 Area is South of 7 radiological areas are posted as fixed contamination		
	Minimum Survey/Sampling	Measurement Requirements		
Measurement	Number and Type	Comments		
Surface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1		
Measurements	30 <u>unbiased</u> survey points uniformly dithroughout the area	SEE NOTE 2		
	25 biased survey points at the followin	SEE NOTE 3		
	locations	SEE NOTE 4		
	Points around floors adjacent to it contaminated equipment (where a such as glycol P-traps (plenums), pumps, cathene system, etc	ccessible)		
	- Point near each airlock to the pler	iums		
	- Near waste drum storage	Natalog Obs #5		
	- Rooms 221, 222, 223, and mame	nance- yf 3/22/00 Chg #5		
	- Stained/discolored areas			
	- Other areas of potential concern b RCT judgement/experience	ased on		
	CEILINGS/WALLS > 2 meters			
	30 biased surveys (divided evenly betwand ceiling when possible) with focus following areas			
	- Walls behind process lines			
	- Tops/sides of plenums			
	- Stained or discolored areas			
	- Areas around pipe or other penetr	ations		
	EQUIPMENT			
	45 <u>biased</u> survey points on equipment or more samples from	with one		
	Equipment which has visible leak contained spills beneath them	s or		
	- Survey points at exhaust ducts			
	- 5 survey points on top of overhead (where locations are accessible)	nd piping		
	- Fixed equipment in maintenance	cage		
	- Other areas of potential concern to RCT judgement/experience	pased on		

Package ID: 99-0002		Building 707		
Survey Area: I		Survey Unit N/A		
Survey Unit Descriction D-14 and I areas	ription: South East corner of roo East of Column G-15 Building 70	m 220, 2 nd floor of Building 707 Area is South of 7 radiological areas are posted as fixed contamination		
	Mınımum Survey/Sampling	Measurement Requirements		
Measurement	Number and Type	Comments		
Surface Scanning	FLOORS/WALLS < 2 meters 55 1 m² surface scans shall be taken at location identified for surface activity measurements. Locations found above DCGL shall be documented CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 2		
Media Samples	NONE (2 nd Floor of 707 does not have painted	d floors)		

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Scans

Volumetric

Isotopic Gamma

Samples

NONE

NONE

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PAGE (SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002 **Building** 707 Survey Area. I Survey Unit N/A Survey Unit Description: South East corner of room 220, 2nd floor of Building 707 Area is South of Column D-14 and East of Column G-15 Building 707 radiological areas are posted as fixed contamination areas Survey/Sampling Instructions NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following Direct alpha contamination Direct beta contamination Removable alpha contamination Removable beta contamination 1m² scan measurements for alpha then beta/gamma contamination NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

Package ID • 99-0002	Building 707
Survey Area· I	Survey Unit N/A

Survey Unit Description. South East corner of room 220, 2nd floor of Building 707 Area is South of Column D-14 and East of Column G-15 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2. The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4. Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

Package IN: 99-0002	Building 707
Survey Area I	Survey Unit N/A

Survey Unit Description: South East corner of room 220, 2nd floor of Building 707 Area is South of Column D-14 and East of Column G-15 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Loss than" values will not be recorded unless otherwise directed by Radiological Engineering
- 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area
- 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute RAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e g, indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building: 707
Survey Area: I	Survey Unit N/A

Survey Unit Description South East corner of room 220, 2nd floor of Building 707 Area is South of Column D-14 and East of Column G-15 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS:

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos.
- 4- Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0002	Building 70	07		l
Survey Area I	Survey Unit	N/A		
Change #	Description	Initiator/ Date	PRE	
1 Added page 6	A	9/ 12/21/99	HA	
2 Deleted at	to direct/scan below	Mars (1) 12/2/99	1195	- JO 01/
2. Replaced pa 6.	to delete not to pon	eas Par afizion	MASS	
3 Replaced of GA	w/ revised pa	Of aliglos	ABE	
Heglaced para on	th New maps And Cor pas 9 through 9 H	replaced (00) apalon		
5 Deleted art to a Type. Pris not in	with surv. Aden.	3/22/00	N/4	_
				_
				_
	<u> </u>			
				3
				_
1				Į

SURVEY PACKAGE VALIDATION CHECKLIST FORM

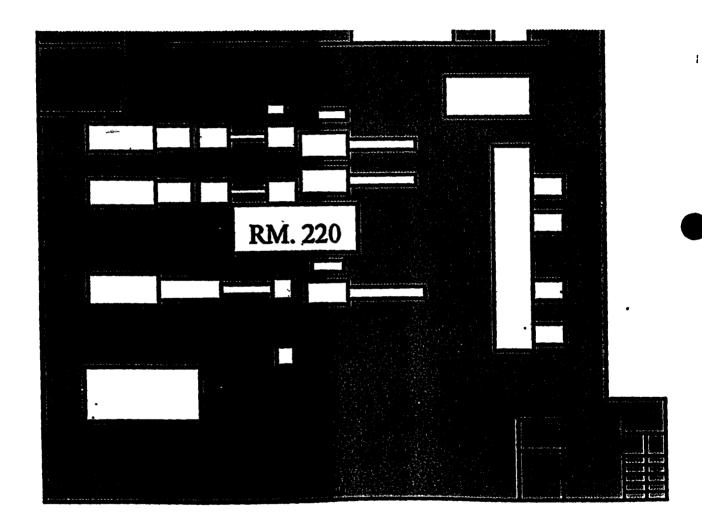
Package ID: 99-0002 Building 707			
Survey Area· I	Survey Unit N/A		
Survey Type · Reconnaissance Level Characterization	n Survey X Final Status Surve	еу П	
All Documentation Reviewed for Completion	RCT Supervisor	PRE	
Scan Surveys	1	(A)	
Total Activity Surveys	1	(a)	
Exposure Rate Surveys	~/A	U/A	
Removable Surveys	1	GA)	
Media Samples	N/A	N/A	
Volumetric Samples	N/A	N/A	
All Surveys and Samples Accounted For	RCT Supervisor	PRE	
Scan Surveys	1	Q1	
Total Activity Surveys	1	6	
Exposure Rate Surveys	~/A	WNA	
Removable Surveys	1	9A	
Media Samples	N/A	NA	
Volumetric Samples	NA	N/A	
Comments All survey peints identification	Ted on survey maps		

Trace superceded of 9/ 2/29/00 Chy #4

Cal Due	we to we see the control of the state of	Note that the profits	S ENDLRON IVE	9801200, 111b	(C)\$EM(G)L(C)\cents	ar syrir a :	
Mfg. Mfg. Model Model Building Serial # Serial # Serial # Location' Lo	The state of the s	VEIRUMENT DAT	A			mananta antaria antaria di mantaria di manta di 1994.	
Model		\		Survey Ty	ne:		1
		Model		Building	P		
Cal Due	Serial #	Serial #		Location!			
Bkg							
Efficiency							
MDA	Efficiency	Efficiency \	Efficiency	RWP#			•
Mfg		•					
Mfg				Date		Time	
Model	Mfg	Mfg	Mfg				
Serial #	Model	Model	Model	RCT		·	/
Cal Due	Serial #				rint name	Signature	Emp #
Bkg		<u> </u>		. 1		-	
### Efficiency Efficiency Efficiency Print name Signature Emp				RCT			/
MDA		Efficiency	V —————	P	rint name	Signature	Emp #
PRL #:							
REMOVABLE Alpha DIRECT Alpha DPM/100 cm² DPM/1							
24	Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	Beta Alg	pha Beta 100 cm ² DPM/100 cm ²	Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	Beta	Alpha	Beta
Print Name Signature Emn	24	RS Sup				Signature	/ Emp #

RADIOLOGICAL SAFETY

Drawing Showing Survey Points



Rev. 05/98

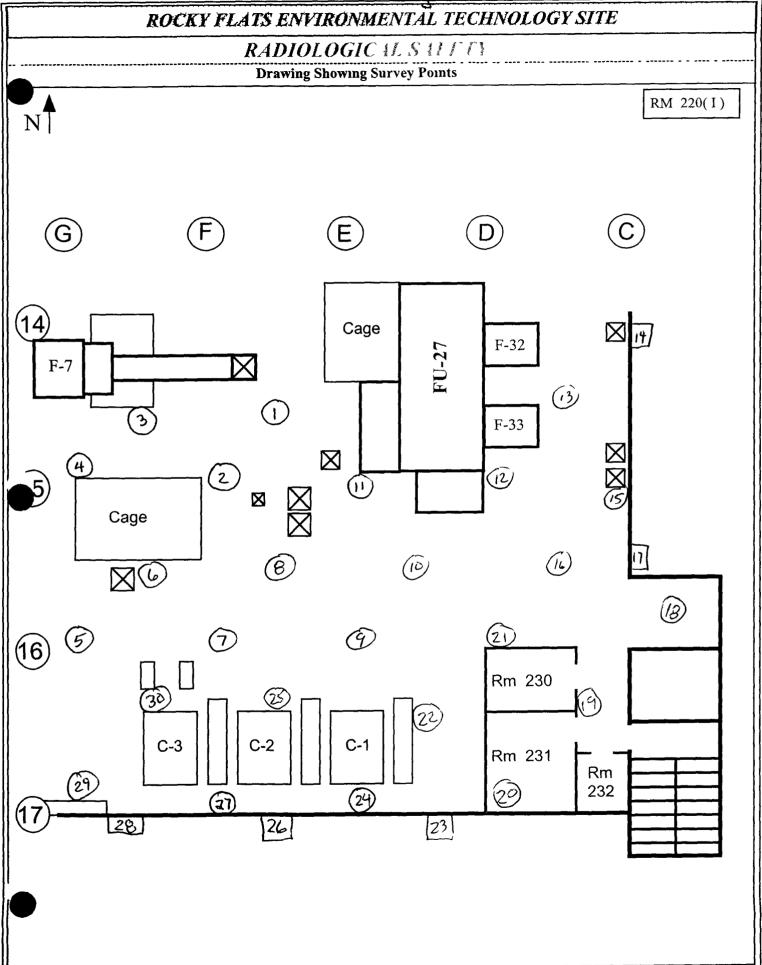
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

IN	ISTRUMENT DATA	A	
fg Eberline	Mfg <u>Eberline</u>	Mfg NeTech	Survey Type Contamination
			Building 707
			Location Room 220 (I)
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due 7-3-00	Purpose Reconnaisance Level Characterization
71		Bkg 20 cpm	
Efficiency 33%	Efficiency 33%	Efficiency 21.01%	RWP# 00-707-1204
MDA 139 091	MDA 12 9 Dem	MDA 44 2 DPH	De 2 - 0 - 00 Time 1/.66
1		a	Date <u>Z-8-00</u> Time <u>1666</u>
Mfg <u>Eberline</u>		Mfg	
Model BC-4	Model BC-4	Model	
Serial # <u>BC-833</u>	Serial # <u>BC-877</u>	Serial #//	
Cal Due <u>7-14-∞</u>	Cal Due 4-12-00	Cal Due //\(\frac{1}{2}\)	
Bkg <u>43 cpm</u>	Bkg 47 cpm	Bkg	RCT
Efficiency 25%	Efficiency 25%	Efficiency	Print name / Signature / Emp #
MDA 101.30Pm	MDA 105.5 DPn	MDA	(
Comments Floor	/ Walls < 2 meters	Unbiased survey	points
1 m ² scans, 1 m	unute pats and swipe	es See map for lo	ocations

SURVEY RESULTS

<u> </u>											
Swipe	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Locatio (Results it	n\Description n DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	
	F	0	16	0	16	F		6	48	10	
2	F	3	-20	-10	17	42	C15-3 C16	0	40	-5	
3	F	0	-8	0	18	F		6	28	5	
4	F	0	-12	0	19	E		3	24	5	
5	F	0	٦٦	-5	20	F		0	15	\circ	
6	F	3	-20	~5 ⁻	21	F		0	16	-10	
7	F	3	89	5	22	F		Ĉ	-68	10	
8	F	3	φ	10	23	42	07 757	0	-12	-10	
9	F	0	8	-5	24	F			24	10	
10	F	0	-40	5	25	F		Û	12	Ð	
11	F	C	0	5	26	<i>42</i>	E17 -> F17	C)	-40	10	
12	F	3	-12	-10	27	F		ひ	8	-5	
13	F	3	4	19	28	<i>4</i> 2	F17 -> G17	\Diamond	-8	24	
14	<2 C14 →C15	0	12	5	29	IF		3	4	10	
5	F	Ô	8	0	30	F		0	-20	10	

Date Reviewed 2.17.00 RS Supervis



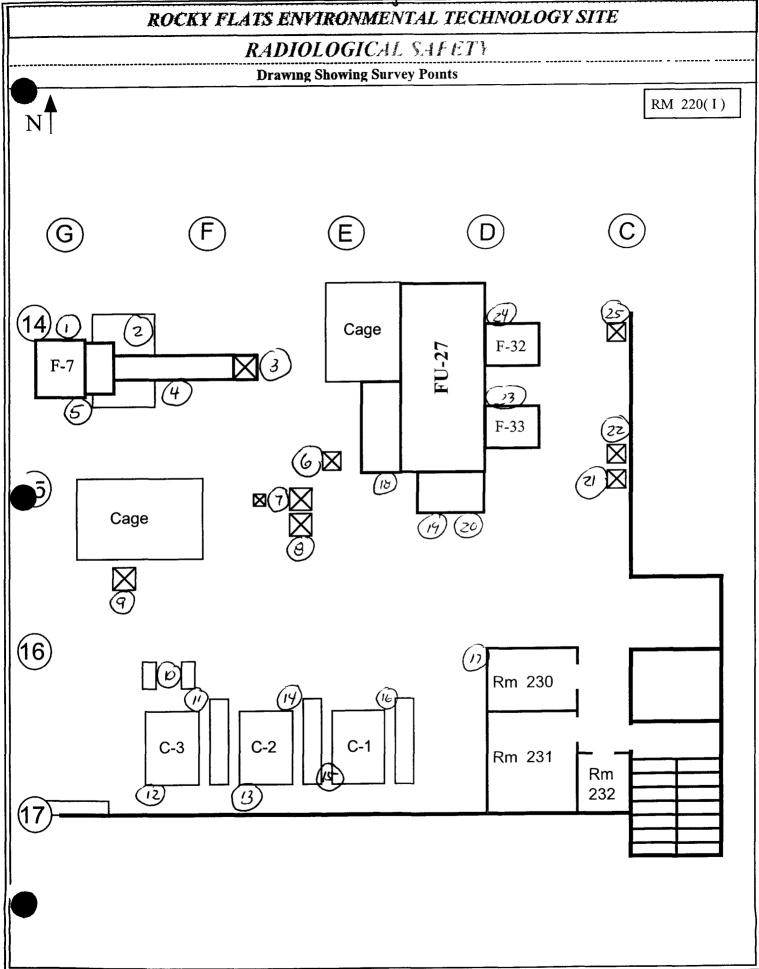
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

IN	STRUMENT DATA							
fg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination					
Model Sac-4	Model Sac-4	Model Electra	Building 707					
Serial #_849	Serial # 837	Serial #_3265	Location Room 220 (I)					
Cal Due <u>4-10-00</u>	Cal Due 5 17.00	Cal Due <u>7-3-00</u>	Purpose Reconnaisance Level Characterization					
Bkg 03 cpm	Bkg O.4 CYM	Bkg 1.0 cm						
Efficiency 33%	Efficiency 33%	Efficiency 21.01%	RWP# 00 - 707 - 1204					
MDA 13.9 DPm	MDA 14.8 0Pm	MDA 35 DPM	Date 2-10-00 Time 1600					
Mfg Eberline	Mfg _ Eberline	Mfg						
Model BC-4	Model BC-4	Model	R					
Serial # 167-833	Serial # BC 872	Serial #						
Cal Due <u>7-14-00</u>	Cal Due 4-12-00	Cal Due						
Bkg 45 cpm	Bkg <u>48 cpm</u>	Bkg	RCT					
Efficiency 25%	Efficiency 25%	Efficiency	Print name / Signature / Emp #					
MDA 103.4 Drn		MDA						
Comments Floor	/ Walls < 2 meters	Brased survey po	ints					
1 m ² scans, 1 m	inute pats and swipe	es See man for lo	ocations					

SURVEY RESULTS

Swipe	Location\Description		ovable	Total	Swipe	Location\Description	Rem	ovable	Total
#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
\mathbf{D}_1	F - Pipes	0	48	<i>5</i> Z	16	F-Pump	0	40	29
2	F- Motor	9	8	38	17	F-Airhead	U	-24	29
_ 3	F - Duct	9	0	15	18	F-Pipes	0	-4	19
4.	F-Duct	0	4	29	19	F - Door Fu-77	0	4	29
5	F-Door	0	-12	34	20	F-Door Fu-27	0	0	10
6	F- Duct	0	-4	38	21	F. Duct	0	48	15
7	F-Duct	3	28	19	22	F- Duct	C	-8	15
8	F-Duct	3	26	34	23	F-FANF-33	6	-40	15
9	F - Duct	0	95	15	24	F-F4N-F32	0	8	24
10	F-Tanks	0	-16	19	25	F-Duct	9	20	29
11	F-Pump	O	8	19	26	end of Survey			
12	F-Pump	0	0	19	27				
13	F-Pump	0	44	19	28	NA			
14	F-Pump	0	4	29	29				
15	F-Pump	3	z8	19	30				

Date Reviewed 2. (7.00 RS Supervision:



(Survey Area Pkg Page $\P D$ of $\P D$) RS FORMS 07 02-01								
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE								
INSTRUMENT DATA								
fg Eberline Mfg Eberline	Mfg _	NeTech	Surv	ey Type Contan	ninatio	n		
odel Sac-4 Model Sac-4			Build	C				
Serial # 849 Serial # 83	7 Serial #	# 3265	Locat					
Cal Due <u>4-10-0</u> Cal Due <u>5-17</u>		e 7-3-00	1	se Reconnaisance	e Level (Charac	terizati	on
Bkg Oi4 cpm Bkg Oil cp	Bkg =	210 cpm						
Efficiency 33% Efficiency 33%		ncy 21 01%		P# 00 - 107 -	-1500	4		
MDA 14,8 DPM MDA 1150		44.2 Opm	.	2-11-00	Time _	153	30_	
Mfg Eberline Mfg Eberline	Mfg ^	VeTech		75.50				
Model BC-4 Model Electra								
Serial # 86-983 Serial #86-87	Z Serial #	1233						
Cal Due 35 833 Cal Due 4-12		e 5-11-00						
Bkg 41 cpm Bkg 48 cpm		[0 cpn	- 07					
Efficiency 25% Efficiency 25%		1cy <u>20.63%</u>	RCT	Print name /	C- am a tur		/ Emain	
MDA 99.2 DPM MDA 106.5	Ym MDA	35,7 DPm		Print name /	Signatui	re	/ Emp	#
Comments Equipment Biased								
1 minute pats and swipes Sec				11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
1 minute pais and swipes Bed	: map for foc	ations						
	·	SURVEY	RESUL	<u></u>				
Swipe Location\Description	Removabl		Swipe	Location\Description			ovable	Total
# (Results in DPM/100cm ²)	Alpha Be	eta Alpha	#	(Results in DPM/100cm ²)		Alpha	Beta	Alpha
1 Motor	0 1	2 19	16	P-trap		C	28	62
2 Duct	0 3		17	Fan F-33		O	48	19
3 Duct Door	3 6	72 10	18	Fan F - 32	2	3	40	19

Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	motor	0	12	19	16	P-trap	C	28	62
2	Duct	0	32	19	17	Fan F-33	0	48	19
3	Duct Door	3	674	10	18	Fan F-32	3	40	19
4	Door	0	-4	185	19	Door	3	12	10
5	Tank	3	\ ₀	19	20	Door	٥	32	24
6	Tank	Ò	32	5	21	Top FU-27	12	-4	24
7	Frame wok	0	84	10	22	Duct	3	0	19
8	Pump	0	8	15	23	Duct	51	76	5
9	Sheilding	0	64	0	24	Duct	7	-12	10
10	Pump	6	64	5	25	Heating waterppe	9	රුර	5
11	tquip	0	40	19	26	Duct	O	40	19
12	Frame work	0	-4	5	27	Crane	3	N	0
13	Équip	3	52	15	28	Duct	()	40	19
14	Sheilding	0	54	15	29	Top Fu-27	C	-4	15
6	Equip	0	-4	15	30	Top Fu-27	3	(U	10

Date Reviewed 2-17-00 RS Supervision

	(Survey Area Pkg Page 4E of 4) RS FORMS 07.02-01									
	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE									
	Prawing Showing Survey Points Drawing Showing Survey Points									
		Pemo		Wing S Total	Swipe	Location\Description	Remo		Total	
ipe #	Location\Description (Results in DPM/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha	
31	Sprikler pipe	0	රිව	10	61		-	-	$-\parallel$	
32	Duct	3	16	15	62		-	1		
33	Top FU-27	0	44	19	63		ļ —	/		
34	Top Fy-27	0	-8	10	64		-/			
35	Top Fu-27	0	20	0	65		 /-			
36	Elect J-Box	3	16	15	66		/			
37	Duct	3	-4	29	67		A			
38	Duct	0	28	19	68		-			
39	Elect Panel	3	50	5	69		-		-	
40	Crane	6	80	19	70		-			
41	Duct	0	20	19	71		-			
42	Top F-7	0	44	5	72		 	-	\vdash	
13	Duct	0	-12	15	73		-	-		
4	Duct	С	-12	5	74		-			
45	Duct	0	4	10	75		+		┼	
46	END OF SURVEY				76		-			
47					77		-	-		
48					75			-		
49			<u>X</u>		79		-	-		
50					80			-		
51		X			81		_	-		
52	11/4				82		_	-		
53	14//				83					
54					84			-	-	
55					85			+	-	
56					86			-	-	
57					87				-	
1 3 7 1 3 8					88			-	-	
59					89			-	-	
1 60	1/				90					

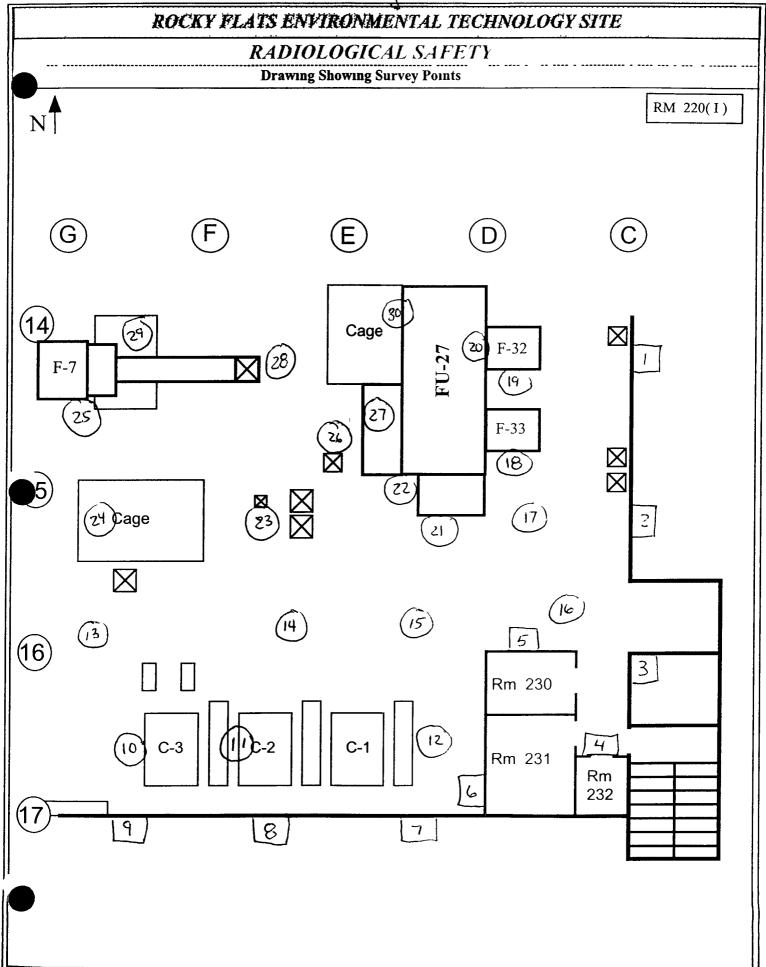
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

	STRUMENT DATA		Survey Type Contamination				
	Mfg Eberline						
	Model Sac-4		Building 707				
Serial # 849	Serial # <u>837</u>	Serial # 1233	Location Room 220 (I)				
Cal Due <u>4-10-∞</u>	Cal Due 5-13-00	Cal Due <u>5-11-00</u>	Purpose Reconnaisance Level Characterization				
- · · · · · · · · · · · · · · · · · · ·	Bkg or cpm	-					
Efficiency 33%	Efficiency 33%	Efficiency 20.63%	RWP# 00 -707 -1204				
MDA 13.9 0Pm	MDA 115 0Pm	MDA 45 Dom	Date <u>2-15-00</u> Time <u>0900</u>				
Mfg Eberline	Mfg Eberline	Mfg					
Model BC-4	Model BC-4	Model					
Serial # BC-833	Serial #_80-872	Serial #/_					
Cal Due 7-14-00	Cal Due 4-12 00	Cal Due					
Bkg 45 cpm	Bkg 49 cpm	Bkg	RCT				
Efficiency 25%	Efficiency 25%	Efficiency	Print name / Signature / Emp #				
MDA 103.4 DPM	MDA 107.5 UPm	MOA	3				
Comments Ceilir	ng / Walls > 2 meter	s Biased survey	points				
1 minute pats and swipes See map for locations							

SURVEY RESULTS

	SURVET RESULTS									
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	
1	>2	0	4	5	16_	C	3	12	24	
2	>2	0	4	19	17	C	0	24	24	
3	>2	0	3-	0	18	C	0	-4	10	
4	>2	0	-20	19	19	С	0	-20	15	
5	>2	0	8	10	20	С	0	0	24	
6	>2	O	68	29	21	C	0	-16	29	
7	>2	0	-50	19	22	С	0	12	34	
8	>2	0	52	10	23	C	0	-20	24	
9	>2	0	-76	15	24	С	0	4	10	
10	C	0	4	15	25	C	0	28	29	
11	C	0	48	3 4	26	С	0	-12	15	
12	С	0	40	24	27	C	0	28	19	
13	С	3	-8	24	28	C	0	-4	5	
14	С	0	-12	10	29	С	0	-8	10	
5	C	0	-12	29	30	С	0	16	34	

Date Reviewed. 217-00 RS Supervision



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SURVEY PACKAGE TRACKING FORM

Package ID 99-0002		Building 707					
Survey Area: J		Survey Unit N/A					
Initiator/ Date	Release Date	Validation Date	Closure Date				
ON 10/25/99	M 12/2/19	d- 4/25/cc	14/25/00				
			 				
		 					
		 					
			1				
		 	 				

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	0002	Building 707	Type 3				
Survey Area J		Survey Unit N/A	A Area (m²) 640				
			220, 2 nd floor of Building 707 Area is South of Column ical areas are posted as fixed contamination areas				
Survey Type			Classification				
RLC Survey X	FSS □		Class 1 Class	2 Class 3 U	Jnknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
30	55	45	0	0	55		
Building		Type [.]	<u> </u>	Survey Area	<u> </u>		
Survey Unit			Area (m²)				
Survey Unit Des	cription						
Survey Type		· · · · · · · · · · · · · · · · · · ·	Classification				
RLC Survey □	FSS □		Class 1 Class	2 □ Class 3 □ U	J nknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре		Survey Area	<u> </u>		
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type			Classification				
RLC Survey	FSS 🗆		Class 1 Class	2 ☐ Class 3 ☐ U	Jnknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building	· · · · · · · · · · · · · · · · · · ·	Туре		Survey Area			
Survey Unit		<u> </u>	Area (m²)				
Survey Unit Description							
Survey Type			Classification				
RLC Survey □	FSS □	·	Class I Class	2 ☐ Class 3 ☐ U	Jnknown 🗆		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
					}		

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707							
Survey Area: J	Survey Unit: N/A							
AREA IS SOUTH OF COLUMN K-14 AND WEST OF	Survey Unit Description: SOUTH WEST CORNER OF ROOM 220, 2 ND FLOOR OF BUILDING 707 AREA IS SOUTH OF COLUMN K-14 AND WEST OF COLUMN G-15 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS							
Building Information:								
Survey Type Reconnaissance Level Characterization S	Survey X Final Status Survey							
Building Type Type 1 ☐ Type 2 ☐ Type 3 X								
Classification Class 1 Class 2 Class 3 Ui	nknown X							
Contaminants of Concern Plutonium X Uranium X	Other 🗆							
Justification for Classification: N/A								
Special Support Requirements: Ladder, manl instrumentation may be required for access into	<u> </u>							
Special Safety Precautions: Access to overhead Review RWP requirements and surveys prior to overheads. Special security requirements for acceptable security requirements.	entry Use caution when working in							
Isolation Controls:								
Level 1 🗆 Level 2 🗆 N/A X								
Labeling Requirements: NONE								
Survey Package Implementation:								

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Package ID. 99-0	002	Building 707				
Survey Area. J		Survey Unit N/A				
		n 220, 2 nd floor of Building 707 Area is South of radiological areas are posted as fixed contamination				
	Minimum Survey/Sampling M	Measurement Requirements				
Measurement	Number and Type	Comments				
Surface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1				
Measurements	30 <u>unbiased</u> survey points uniformly dist throughout the area	ributed SEE NOTE 2				
	25 biased survey points at the following	SEE NOTE 3				
	locations	SEE NOTE 4				
	- Points around floors adjacent to inte contaminated equipment (where acc such as glycol P-traps (plenums), hy pumps, cathene system, etc	eessible)				
	- Point near each airlock to the plenui	ns				
	- Near waste drum storage	Make les Che HE				
	- Rooms 221, 222, 223, and maintena	mee \$ 3/22/00 (by #5				
	- Stamed/discolored areas					
	- Other areas of potential concern bas RCT judgement/experience	ed on				
	CEILINGS/WALLS > 2 meters					
	30 <u>biased</u> surveys (divided evenly betwee and ceiling when possible) with focus on following areas					
	- Walls behind process lines					
	- Tops/sides of plenums					
	- Stained or discolored areas					
	- Areas around pipe or other penetrat	ons				
	EQUIPMENT					
	45 <u>biased</u> survey points on equipment will or more samples from	th one				
	- Equipment which has visible leaks of contained spills beneath them	or .				
	- Survey points at exhaust ducts					
	- 5 survey points on top of overhead (where locations are accessible)	piping				
	- Fixed equipment in maintenance ca	ge				
	- Other areas of potential concern bas RCT judgement/experience	ed on				

Package ID: 99-0002	Building 707
Survey Area: J	Survey Unit N/A

Survey Unit Description: South West corner of room 220, 2nd floor of Building 707 Area is South of Column K-14 and West of Column G-15 Building 707 radiological areas are posted as fixed contamination areas

	Mınımum Survey/Samplıng Measure	ment Requirements	
Measurement	Number and Type	Comments	
Surface Scanning	FLOORS/WALLS < 2 meters	SEE NOTE 1	
	55 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented	SEE NOTE 2	
		SEE NOTE 3	
		SEE NOTE 4	
	CEILINGS/WALLS > 2 meters		
	NONE		
	EQUIPMENT		
	NONE		
Media Samples	NONE		
	(2 nd Floor of 707 does not have painted floors)		
olumetric	NONE		
Samples	TVOILE		
_			
sotopic Gamma	NONE		
cans			



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PAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID 99-0002	Building 707
Survey Area· J	Survey Unit N/A

Survey Unit Description: South West corner of room 220, 2nd floor of Building 707 Area is South of Column K-14 and West of Column G-15 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

Package ID · 99-0002	Building 707
Survey Area. J	Survey Unit N/A

Survey Unit Description: South West corner of room 220, 2nd floor of Building 707 Area is South of Column K-14 and West of Column G-15 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

Package ID: 99-0002	Building 707
Survey Area: J	Survey Unit N/A

Survey Unit Description: South West corner of room 220, 2nd floor of Building 707 Area is South of Column K-14 and West of Column G-15 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected.
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4- Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc)

Package D· 99-0002	Building: 707
Survey Area: J	Survey Unit N/A

Survey Unit Description. South West corner of room 220, 2nd floor of Building 707 Area is South of Column K-14 and West of Column G-15 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0002		Building 707			
Survey Area: J		Survey Unit N/	A		
Change #	Description		Initiator/ Date	PRE	
1 Ado	led page 6A		9) 12/2/99	ME	$\frac{1}{2}$
-2 Deles	ed set to diese	tiscan beta mea	S. 01/2/17	MB.	Y) o
2 Adde	Ted. As 6 to elin	t/SCAN beta man inake pet to Ba	MOT 01/17/00	MIZE	9
3 Repla	need Po GA W/A	Merit iaa	160 0/18/00	HBE	
4 Replace	ced page 9 with power was made and comple	ages 9 through 93 And survey data	KND no look	MBE	
5 Typoga	error'. Deleted 'as 3 which are not in this	et. to Rm. 221, 20 s survey AREA.	3/22/00	N/A	
					_
					_
					4
					_
			-		
			-		_
					1
					_

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID. 99-0002	Building. 707		
Survey Area: J	Survey Unit N/A		
Survey Type. Reconnaissance Level Characterization Survey X Final Status Survey □			
All Documentation Reviewed for Completion	RCT Supervisor	PRE	
Scan Surveys	<i>(</i>	1	
Total Activity Surveys		d	
Exposure Rate Surveys	N/4	N/A	
Removable Surveys	1	1	
Media Samples	N/A	N/A	
Volumetric Samples	N/A	N/A	
All Surveys and Samples Accounted For	RCT Supervisor	PRE	
Scan Surveys	1	dr-	
Total Activity Surveys	1	1'-	
Exposure Rate Surveys	N/A	N/A	
Removable Surveys	1	dr-	
Media Samples	N/A	N/A	
Volumetric Samples	~/A	N/A	
Comments All survey pents identified	on survey maps.		
RESS Manager Printed Name Employee #	RESS Manager Signature	Date	

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Page superceded 2/29/00 Of Change #4

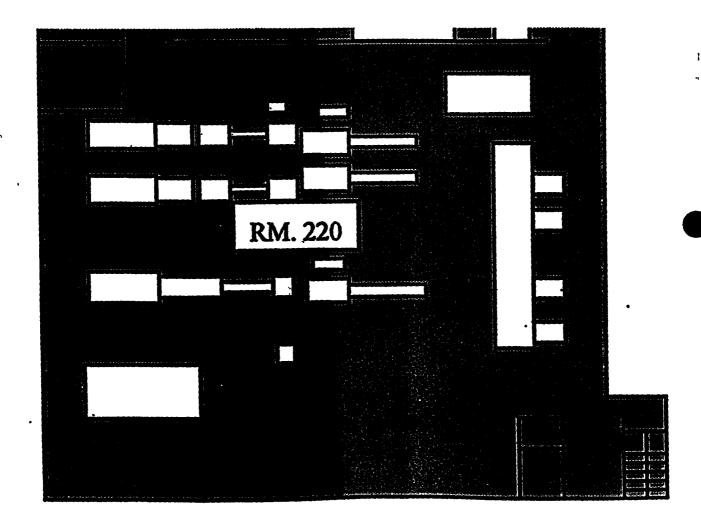
and the second s	Aguara Cara	M. Control of the con	BB)NHP391, TEKC) \$184.031,030	Car Strick	
\ INSTRUMENT DATA					
Mfg	Mfg		Survey Type:		
Model	Model		Building		
Serial #	Serial #	Serial #	Location*		
Cal Due	Cal Due	Cal Due			
Bkg	Bkg		-		
Efficiency	Bfficiency	Efficiency	RWP#		
MDA	MDA				
WID/1			Date	Time	
Mfg	Mfg	Mfg			
Model	Model		RCT	/	
Serial #	Serial #			Signature Emp #	
Cal Due	Cal Due	Cal Due			
Bkg	Bkg	Bkg	RCT	/	
Efficiency	Efficiency			Signature Emp #	
MDA		MDA	_		
		SURVEY	/ RESULTS		
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22		Alpha Beta DPM/100 cm²	26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	Alpha Beta DPM/100 cm² DPM/100 cm²	
23 24 25 Date Reviewed:	RS	S Supervision:	48 50 /		

209/466

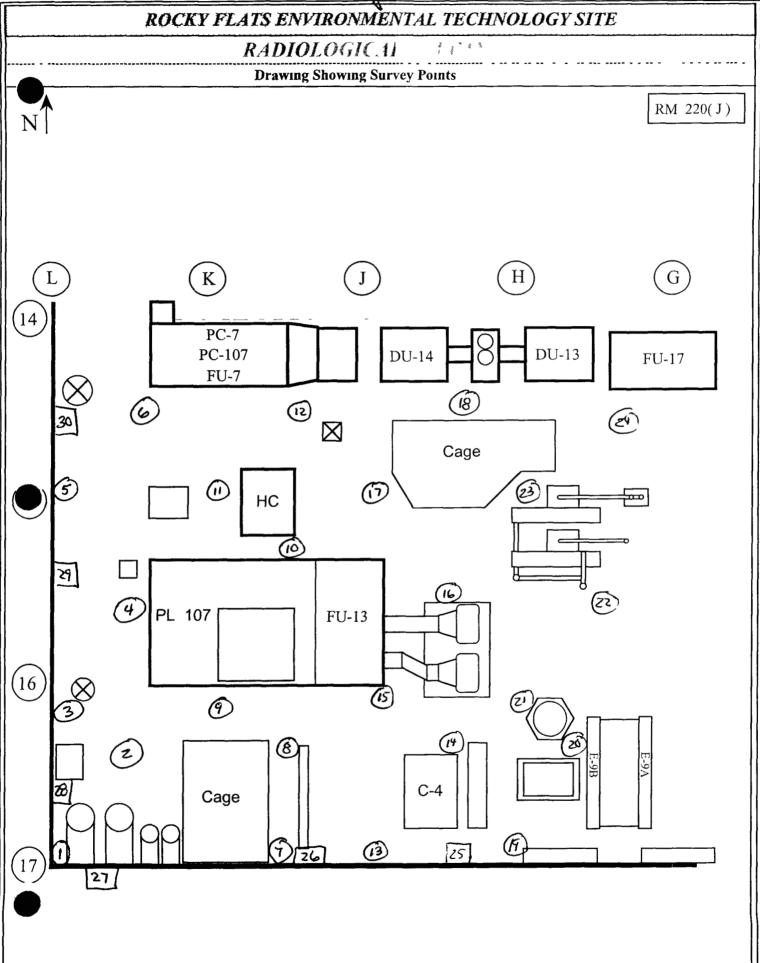
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RADIOLOGICAL SAFETY

Drawing Showing Survey Points



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE INSTRUMENT DATA Survey Type _ Contamination Mfg Eberline Mfg NeTech fg Eberline Model Sac-4 Building _707 lodel Sac-4 Model Electra Location Room 220 Serial # 849 Serial # 15/8 Serial # 837 Cal Due 6-29 00 Purpose Reconnaisance Level Characterization Cal Due 4-10 00 Cal Due 5-17-00 Bkg OYcom Bkg O3 com Bkg 30 cpm RWP# 00-707-1204 Efficiency 2/86% Efficiency 33% Efficiency 33% MDA 139 dpm MDA 148 dpm MDA 493 dom Time //00 Date 2-900 Mfg Eberline Mfg Eberline Mfg \ Model BC-4 Model BC-4 Model Serial # 833 Serial # 872 Serial # Cal Due 7/4-00 Cal Due 4 12 00 Cal Due XA Bkg _ Bkg 43 cpm Bkg 48 cpm RCT_ Efficiency 25% Efficiency 25% Efficiency Print name Signature / Emp # MDA 10/3 dom MDA 106 5 dom **MDA** Comments Floor / Walls < 2 meters Unbiased survey points 1 m² scans, 1 minute pats and swipes See map for locations **SURVEY RESULTS** Removable Removable Total Total Swipe Swipe Location\Description Location\Description Beta Alpha (Results in DPM/100cm²) Alpha Beta Alpha (Results in DPM/100cm²) Alpha 0 27 27 -12 16 3 0 28 5 -12 - 5 2 17 -60 18 0 0 3 60 18 0 -36 19 0 5 -ଝ 14 0 20 27 0 6 16 21 7 I -4 -20 0 18 22 14 Ģ -32 -8 23 0 -16 0 9 60 -18 24 \circ 20 0 9 0 8 23 6 10 25 W<2 \bigcirc O \circ 9 11 20 26 0 W<2 3 9 - 40 9 28 W<2 0 12 27 0 ଟ 23 0 20 28 W<2 -8 0 Ç 0 29 142 0 0 -24 4 -5 23 wia 30 Date Reviewed: 2-17-00 RS Supervisi



	(Survey Area Pkg Page <u>4K</u> 01 <u>4</u>) RS FORMS 07.02-01									
	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE									
	INS	STRUMENT DA	TA							
fg	<u>Eberline</u>	Mfg Eberline	_ Mf	g Ne	ech	Sur	vey Type <u>Contaminatio</u>	<u>n</u>		
100	del_Sac-4	Model Sac-4	_ Mo	del Elec	ctra	Build	ling 707	,		
Seri	al # <u>849</u>	Serial # <u>837</u>	_ Ser	nal # <u>(</u>	518	Loca	tion Room 220 (
		Cal Due <u>5 17</u>					ose Reconnaisance Level	Charac	terizat	1011
		Bkg 0,4 cp					P# <u>00-707</u> 1204			
		Efficiency 33%				, 1	P# <u>CO 707 1804</u>			
MD	A 13 4 DPM	MDA 1430	₽w MI	OA <u>49</u>	3 DP	Dat	e 2-10-00 Tume_	150	20	
Mfg		Mfg Eberline								
		Model BC-4		del						
		Serial # 872			N/A					
N. E.	4	Cal Due 4-12-1		,						
		Bkg 48 Cpr	_			RCT				
IR .		Efficiency <u>25%</u> MDA <u>/06.5</u>	~	ieiency			Print name / Signatu	re	/ Emp) #
_		/ Walls < 2 mete			TVOV D	unte				
		nute pats and sw					ne			
- `	m- scans, i mi	nute pats and sw	ipes	BCC III	ap 101 1	<u>ocatio</u>	113			

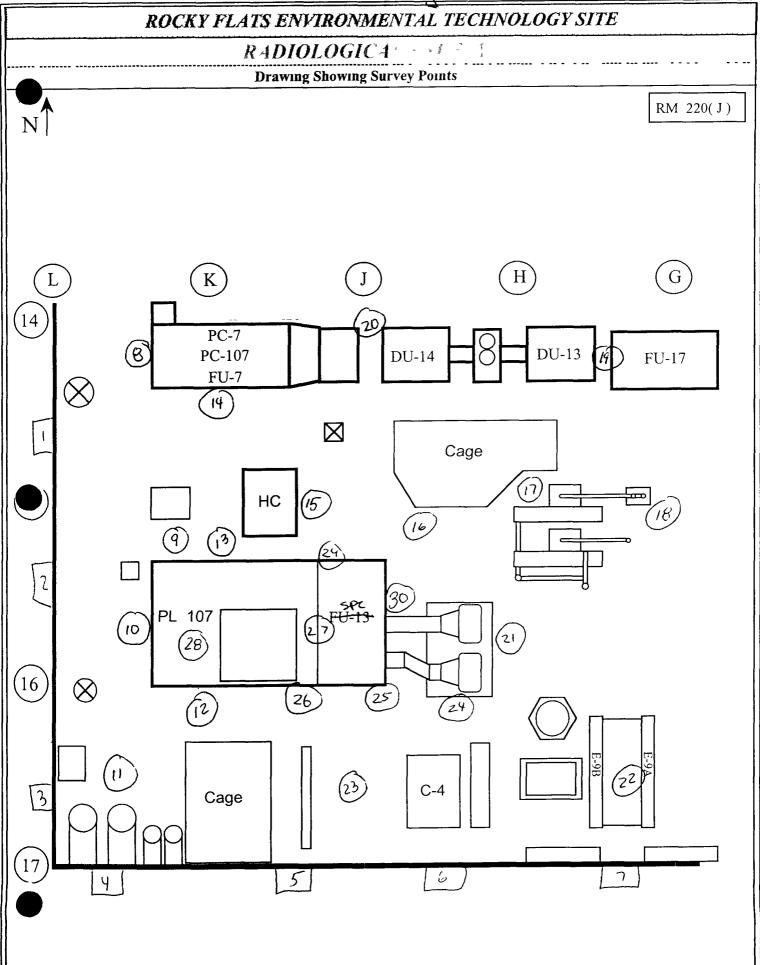
				<u>su</u>	<u>RVEY</u>	<u>resu</u>	LTS			
Swipe		ription		ovable	Total	Swipe			novable	Total
#	(Results in DPM/	100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
1	F		0	52	37	16	LF.	0	12 B	9
2	F		0	-40	28	17	F	C	16	28
3	F		0	12	37	18	I ⁻	0	0	46
4	F		0	28	14	19	I -	0	-24	37
5	F		0	-8	19	20	Į-	0	0	14
6	F		0	0	28	21	F	0	4	14
7	F	······································	0	-16	19	22	F	3	-4	32
8	F		0	-24	46	23	Ē	1-	-32	23
9	F		0	<i>5</i> 2	46	24	F	0	24	9
10	E		0	-16	23	25	F	6	28	14
11	F		0	24	23	26	end of Sur	u		
12	F		0	-4	37	27		\		
13	F		3	\circ	23	28	7			

Date Reviewed: 2-17-00 RS Supervision.

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE							
INSTRUMENT DATA Contamination							
fig Eberline Mfg Eberline Mfg N					vey Type Contaminat	1011	
Odel Sac-4 Model Sac-4 Serial # 849 Serial # 837		Model Electra			$\frac{1}{1}$ $\frac{707}{1}$./)	
Cal Due 4-10-00 Cal Due 5-17-0						el Characterization	
Bkg O.Ocam Bkg O./c		_					
Efficiency 33% Efficiency 33%	_ Eff	iciency	2186	∮ RW	P# 00 707-120L	<u> </u>	
MDA <u>8,2 DPm</u> MDA <u>//. S DI</u>	m MI	DA <u>33</u>	offy		e <u>214-00</u> Tung		
Mfg Eberline Mfg Eberline							
Model BC-4 Model BC-4							
Serial # <u>833</u> Serial # <u>872</u> Cal Due <u>7-/40</u> 0 Cal Due <u>4-/2-0</u>							
Bkg 44 cpm Bkg 46 cp							
Efficiency 25% Efficiency 25%							
MDA 102,4pm MDA 1045	Di'n MI	da <u>35</u>	7d/m				
Comments <u>Equipment</u> Biased si							
1 minute pats and swipes See	map fo	r location	ons				
34-44 >2 meters	,	م لہ			2		
No Fixed Equipment	in r		RVEY				
				KESU.	L L		
Swipe Location\Description (Results in DPM/100cm ²)	Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Removable Total Alpha Beta Alpha	
	 	28				0 -12 19	
1 Door F4-7	0	1	37	16	Top P1-107	2 //	
2 Door HC-107A	3	-20	23	17	Above SAAM 37 Fan F-117A		
3 Top HC - 107A		T		18			
4 Top Fu-7	3	-12	32	19	Tank	0 -40 37	
5 Tank	0	-12	0	20	Pump	0 -4 23	
6 Door F4-17	0	-44	14	21	Pump	0 -20 23	
7 TOP DU-13	0	-/6	37	22	Pump	3-20 28	
8 Door Phinterior	3	-4	37	23	C-4	0 24 32	
9 Door Fur 13/107	0	-4	23	24	C-4	3 16 28	
10 Door P1-107	0	-20	64	25	F-9B	0 40 23	
11 Door P1-107	0	0	42	26	E-9A	0 -12 14	
12 Door Pl-107	3	16	28	27	Pipe	0 4 9	
13 Door 4C-167	0	-12	37	28	P.pe	0 78423	
14 TOP HC-107	0	0	23	29	Top P1-107	3 -6 0	
5 TOP P1-107	0	28	23	30	TOD P1-107	0 24 14	
Date Reviewed: 2 17 00 RS S	upervis	sion: _	-		, ,		

RADIOLOGIC 41 SAFETY **Drawing Showing Survey Points** Removable Total Removable Total Swipe Location\Description Location\Description pe Alpha Beta Alpha (Results in DPM/100cm²) (Results in DPM/100cm²) Alpha Beta Alpha Top FU-7 -49 Top Fu-7 Top FU-17 Duct Brime Water I-Beam Wire tray -12/24 Wire tray -12 PE-TRAP END OF SURVEY

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE										
		STRUMENT DAT				ז -	- Contaminatio			
_	Eberline						vey Type Contaminatio	<u> </u>		
Sodel Sac-4 Model Sac-4 Serial # 849 Serial # 837					1	tion Room 220 (J			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
Cal Due 4-10-00 Cal Due 5-17-00								terizati	ıon	
	O12 CPM	Bkg oopp				-				
	ciency 33%	Efficiency 33%	Eff	iciency_	20.63%		P# <u>00-707 4204</u>			
	A 12.9 Dan	MDA 82 DPm				Date	e	1400	<u> </u>	
	Eberline Eberline	Mfg Eberline	-	g						
	del <u>BC-4</u> al # <i>BC</i> -833	Model BC-4 Serial # BC-872		rial#	//					
1				Due	A					
	42 cpm			g		RCT	•			
			Eff	iciency_		RCI	Print name / Signatu	re	/ Emp	#
	MDA (00,300m MDA 1045 per MDA									
8		$\frac{1}{2}$ / Walls > 2 met				points				
$\frac{1}{}$	minute pats an	nd swipes See n	nap for	r location	ons					
l —						-				
				SU	RVEY	RESU	LTS			
Swipe		ription		novable	Total	Swipe	Location\Description _	$\overline{}$	ovable	Total
#	(Results in DPM)	/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
1	> 2		0	-12	0	16	C	0	-8	34
2	>2		0	0	15	17	С	1	-12	24
3	>2		3	8	10	18_	С	0	28	19
4	>2		0	4	0	19	C	0	-8	29
5	>2		6	4	24	20_	(0	40	29
6	>2		0	-20	19	21	С	0	-4	19
7	>2		0	0	10	22	C	0	-12	43
8	С		0	16	19	23_	C	O	20	19
9	С		\bigcirc	12	29	24	C	3	-12	34
10	С		0	-48	24	25	C	0	8	15
11	С		3	12	19	26	C	3	8	24
12	С		9	-24	19	27	С	C	-4	29
13	C		3	-24	19	28	C	6	16	19
14	C		3	-4	10	29	С	0	12	15
5	C		3	24	19	30	C	0	-50	34
Date	Reviewed _	<u>2·17 0∂</u> RS Su	ıpervis	non						



 $220^{\text{Rev }02/00}$

SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002		Building 707			
Survey Area. K		Survey Unit N/A			
Initiator/ Date	Release Date	Validation Date	Closure Date		
A) 10/35/49	9/ 12/21/99	EM 4/13/00	b 4/25/10-b.		
·					

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	0002	Building 707		Type 3		
Survey Area · K		Survey Unit N/A	A Area (m ²) 523			
Survey Unit Des Columns M-3, N	cription Northern N-3, O-3, P-3	portion of room 2	240, 2 nd floor of B	uilding 707 Area	ı ıs North of	
Survey Type			Classification			
RLC Survey X	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Unknown X	
Random/Uniform Surface Activity Measurements	Random/Uniform Biased Surface Equipment Surface Surface Activity Activity Measurements Measurements Measurements		Media Samples	Volumetric Samples	Surface Activity Scans	
30	55	45	0	0	55	
Building		Туре		Survey Area		
Survey Unit			Area (m²)			
Survey Unit Description						
Survey Type			Classification			
RLC Survey □	FSS □		Class 1 □ Class	2 □ Class 3 □ 1	Jnknown 🗆	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building		Туре	Survey Area			
Survey Unit			Area (m²)			
Survey Unit Des	cription					
Survey Type			Classification			
RLC Survey □	FSS □		Class 1 Class	Jnknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building		Туре	Survey Area			
Survey Unit			Area (m²)			
Survey Unit Des	cription					
Survey Type			Classification			
RLC Survey □	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown 🗆	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building. 707							
Survey Area: K	Survey Unit. N/A							
Survey Unit Description: NORTHERN PORTION OF ROOM 240, 2 ND FLOOR OF BUILDING 707 AREA IS NORTH OF COLUMNS M-3, N-3, O-3, P-3 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS								
Building Information:								
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey							
Building Type Type 1 ☐ Type 2 ☐ Type 3 X								
Classification Class 1 □ Class 2 □ Class 3 □ Ur	nknown X							
Contaminants of Concern Plutonium X Uranium X	Other 🗆							
Justification for Classification: N/A								
Special Support Requirements: Ladder, manisinstrumentation may be required for access into								
Special Safety Precautions: Access to overhead Review RWP requirements and surveys prior to overheads Special security requirements for access to overhead security requirements.	entry Use caution when working in							
Isolation Controls:								
Level 1 🗆 Level 2 🗖 N/A X								
Labeling Requirements: NONE Survey Package Implementation:								
Survey rackage implementation:	7							
H								
KESS Manager Printed Name Employee # 1 KES	S Manager Signature Date							

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	002 Buil	Building 707 Survey Unit N/A					
Survey Area: K	Surv						
	ription: Northern portion of room 240, , O-3, P-3 Building 707 radiological area	2 nd floor of Building 707 Area is North of s are posted as fixed contamination areas					
Minimum Survey/Sampling Measurement Requirements							
Measurement	Number and Type	Comments					
Surface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1					
Measurements	30 <u>unbiased</u> survey points uniformly distribut throughout the area	SEE NOTE 2					
	25 biased survey points at the following	SEE NOTE 3					
	locations	SEE NOTE 4					
	Points around floors adjacent to internal contaminated equipment (where accessified such as glycol P-traps (plenums), hydrau pumps, etc	le)					
	- Point near each airlock to the plenums						
	- Near waste drum storage						
	- Other areas of potential concern based o RCT judgement/experience	1					
	CEILINGS/WALLS > 2 meters						
	30 <u>biased</u> surveys (divided evenly between w and ceiling when possible) with focus on following areas	all					
	- Walls behind process lines						
	- Tops/sides of plenums						
	- Stained or discolored areas						
	- Areas around pipe or other penetrations						
	EQUIPMENT						
	45 <u>biased</u> survey points on equipment with or or more samples from	е					
	- Equipment which has visible leaks or contained spills beneath them						
	- Survey points at exhaust ducts						
	5 survey points on top of overhead pipir (where locations are accessible)	g					
	- Other areas of potential concern based or	ı					

Package ID: 99-0002			Building: 707				
Survey Area· K		Survey Unit N/A					
			floor of Building 707 Area is North of reposted as fixed contamination areas				
Minimum Survey/Sampling Measurement Requirements							
Measurement	Number and Type		Comments				
Surface Scanning	FLOORS/WALLS < 2 meters 55 1 m² surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE		SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4				
Media Samples	NONE (2 nd Floor of 707 does not have painted	floors)					
Volumetric Samples	NONE						
Isotopic Gamma Scans	NONE	-					

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002

Building: 707

Survey Area: K

Survey Unit. N/A

Survey Unit Description: Northern portion of room 240, 2nd floor of Building 707 Area is North of Columns M-3, N-3, O-3, P-3 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

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Package ID: 99-0002	Building 707
Survey Area: K	Survey Unit N/A

Survey Unit Description. Northern portion of room 240, 2nd floor of Building 707 Area is North of Columns M-3, N-3, O-3, P-3 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

Package ID: 99-0002	Building 707
Survey Area, K	Survey Unit N/A
Survey Unit Description: Northern portion of ro	om 240, 2 nd floor of Building 707. Area is North of

Survey Unit Description: Northern portion of room 240, 2nd floor of Building 707 Area is North of Columns M-3, N-3, O-3, P-3 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002 Building: 707
Survey Area: K Survey Unit N/A

Survey Unit Description. Northern portion of room 240, 2nd floor of Building 707 Area is North of Columns M-3, N-3, O-3, P-3 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected.
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4- Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

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SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 9	99-0002	Building 707				
Survey Area:	K	Survey Unit N/A		1		
Change #	Description		Initiator/ Date	PRE		
1	Added page GA		12/21/94	ATTE		
2	Deleted Ref to die	retisan 16 man	12/2/97	MO)	0/17	
2	Tepl. pg 6 to delete ea	t. to spec of men	S/ 01/1/00	SHE		
<u>2</u> 3	Registed AL GA W/A	POLICIED DE	Of elistoo	UBE		
4	TREPIECE OF A with pages to ADD COMMUNICATION AND COMMUNICATION AND THE PROPIECE OF THE PROPIE	9 Heach 9H	(g) 02/20/20	1188		
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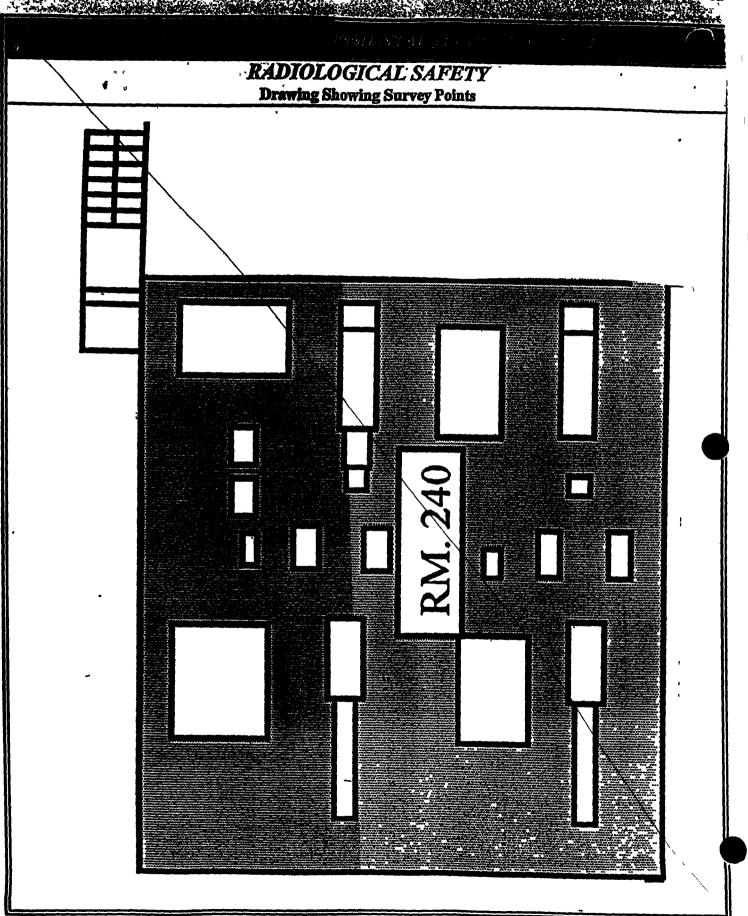
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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Building 707			
Survey Area K	Survey Unit N/A	Survey Unit N/A		
Survey Type: Reconnaissance Level Characterization	Survey X Final Status Sur	vey 🗆		
All Documentation Reviewed for Completion	RCT Supervisor	PRE		
Scan Surveys	1	(A)		
Total Activity Surveys	1	09		
Exposure Rate Surveys	~/4	N/A		
Removable Surveys	1	91		
Media Samples	N/A	N/A		
Volumetric Samples	N/A	N/A		
All Surveys and Samples Accounted For	RCT Supervisor	PRE		
Scan Surveys	1	A		
Total Activity Surveys	1	Ugg		
Exposure Rate Surveys	N/A	N/A		
Removable Surveys	1	'an		
Media Samples	N/A	MA		
Volumetric Samples	N/A	N/A		
Comments All survey points identified	en suavoy mags.			

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		2787.398	TREADY	ingate, me	(C)FUNOIL(O)	77 3////					
\ I P	STRUMENT	DATA					A MINISTER OF THE PROPERTY OF				
Mfg	Mfg			Survey Type:							
Model	Model	Model		Building.							
Serial #	Serial #	Serial	#	Location*							
Cal Due	Cal Due	Cal Du	ie				<u> </u>				
Bkg.	Bkg\			<u> </u>							
Efficiency	Efficiency	Efficie	ncy	RWP#							
MDA	MDA \										
				Date		Time					
Mfg	Mfg	Mfg									
Model	Model			RCT		,	/ 1				
Serial #	Serial #		#		rint name	Signati	ure Emp#				
Cal Due	Cal Due		ie								
Bkg	Bkg.			RCT	/	1	/				
Efficiency	Efficiency	Efficie	ncy	P	rint name	Signati	ure Emp#				
MDA	MDA			İ		J	•				
PRL#:					······································						
											
			SURVEY R	ESULTS							
REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²				
1				26 27							
3				28							
4				29,							
5				30 \							
6				31							
7				32							
8				33							
10				35							
11				36	\						
12				37	\						
13 14				38							
15				40	/						
16				41							
17				42							
18				43							
19				44							
20				46	/						
22				47		\					
23				48							
24				49		\	·				
25				50							
Date Reviewed:	RS	Supervision		nt Name		Signature	/ Émp #				

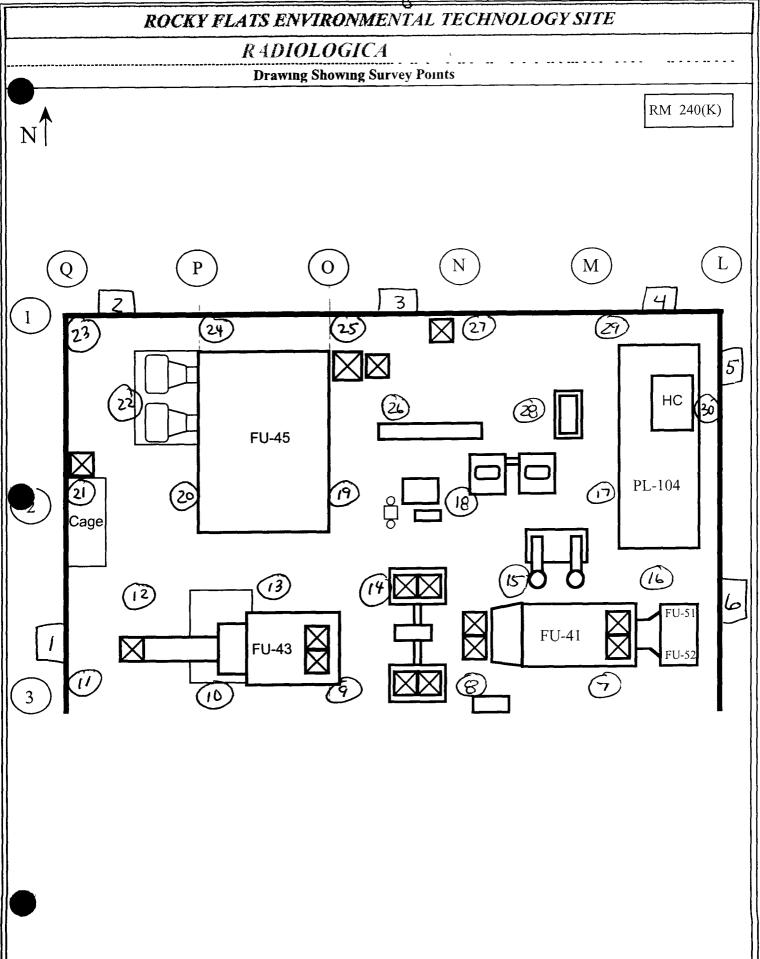


	<u></u>		
IN	ISTRUMENT DATA	<u> </u>	
fg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination
odel Sac-4	Model Sac-4	Model Electra	Building 707
	Serial # 837	Serial # 3265	Location Room 240 (K)
	Cal Due 5-17-00		Purpose Reconnaisance Level Characterization
Bkg olcom	Bkg Olocom	Bkg O,Ocpm	26 202 12611
	Efficiency 33%	Efficiency 2) 01%	RWP# 00 -707 - 1204
MDA 11,5 02	MDA <u>8, 2</u>	MDA 12.9 DPM	Date 2-17-00 Time 1500
Mfg Eberline	Mfg Eberline	Mfg	1
Model BC-4	Model BC-4	Model	
	Serial # BC-872		
	Cal Due 4-12-00	Cal Due	
Bkg 46 com		Bkg	RCT
	,	Efficiency	Print name / Signature / Emp #
MDA 104 ,50Pm	MDA 106 DPM	MOA	1
	/ Walls < 2 meters	Unbiased survey	points
1 m ² scans, 1 m	inute pats and swipe	es See map for le	ocations
ll			

SURVEY RESULTS

<u> </u>									
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	۷ ک	0	-16	24	16	F	3	68	29
2	< 2	0	28	15	17	F	0	4	24
3	< 2	0	-4	24	18	F	3	-20	34
4	42	ഗ	-12	5	19	F	0	-24	34
5	<i>ح</i> 2	3	-16	10	20	F	0	16	57
6	د ک	0	-40	15	21	F	Ø	-4	43
7	F	0	4	19	22	F	0	-8	34
8	F	0	40	29	23	F	0	0	38
9	E	0	-8	34	24	F	3	36	38
10	F	6	12	34	25	F	0	-12	38
11	F	3	4	43	26	F	0	0	48
12	F	0	44	43	27	É	0	-20	48
13	F	0	0	43	28	F	0	0	24
14	F	Ò	4	19	29	F	3	-40	43
5	F	0	-8	43	30	F	Ø	-8	48

Date Reviewed: 223.00 RS Supervision.

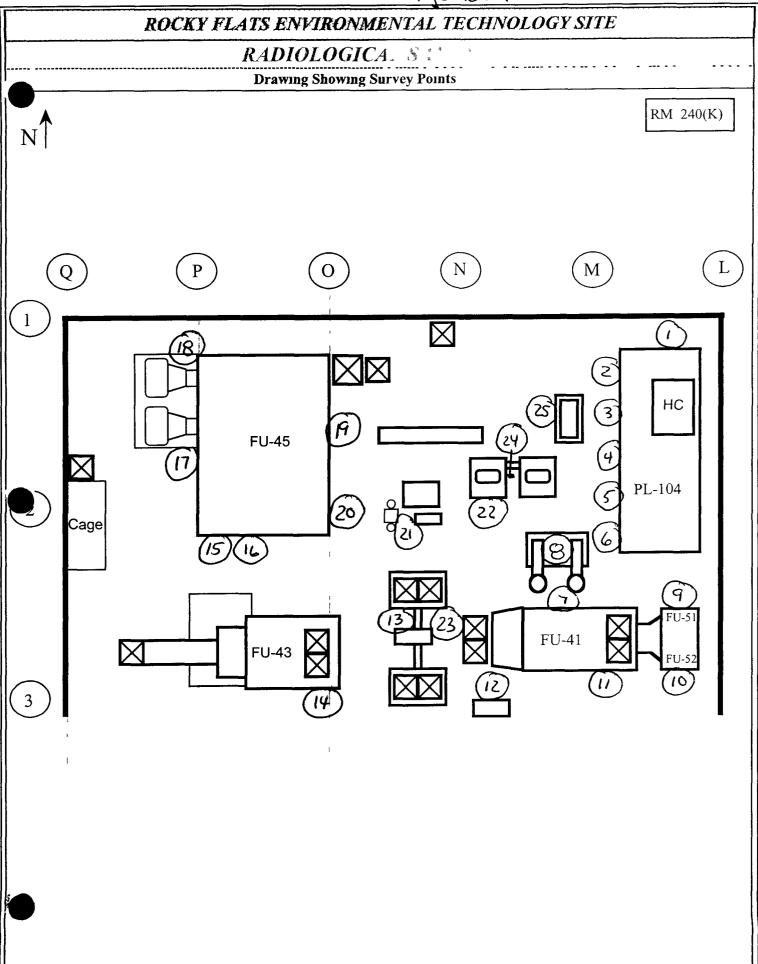


IN	STRUMENT DATA	_ 	
fg Eberline	Mfg Eberline		Survey Type Contamination
odel Sac-4			Building 707
	Serial # 837	Serial # 1233	Location Room 240 (K)
	Cal Due 5-17-00		Purpose Reconnaisance Level Characterization
Bkg O.4cpm	Bkg arcom	Bkg oocpm	707 707 12011
Efficiency 33%	Efficiency 33%		RWP# 00-707-1204
MDA 14 8 DPM	MDA 11.5 DPm	MDA 13100m	Date 2-18-00 Time 1530
Mfg Eberline	Mfg Eberline	Mfg	/
Model BC-4	Model BC-4	Model	
	Serial #_BC-877	Serial #	
		Cal Due	
	Bkg 46 com	Bkg	RCT
	Efficiency 25%	Efficiency	Print name / Signature / Emp #
MDA 1024 DPm	MDA 1045 DPM	MDOA	
Comments Floor	r / Walls < 2 meters	Brased survey po	oints
1 m ² scans, 1 m	ninute pats and swipe	es See map for le	ocations

SURVEY RESULTS

	wine Location/Description Remova			Total	_		Removable		Total
Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha	Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha	Beta	Alpha
1	F - Pitrap	0	4	10	16	F- Door FU-45	0	-/2	34
2	F - Door P1-104	3	4	34	17	F- FAN	0	-8	5
3	F - Door PL-104	0	-36	19	18	F- FAN	0	-20	5
4	F-Door P1-104	0	-32	19	19	F- P-trap	0	-40	5
5	F-Door PI-164	0	တ	29	20	F- Door Fu-45	0	-16	15
6	F- Door P1-104	3	40	24	21	F- Pump	0	12	19
7	F- Drain	3	-20	24	22	F- Pump	0	0	24
8	F-FAN	9	20	19	23	F- Primp Drain	0	-40	15
9	F-F4-51	3	0	39	24	F- Pump	3	-40	34
10	F-F4-52	0	-8	44	25	F- Pump	0	24	39
11	F- Door	3	0	34	26	END OF Survey			
12	F- Pump	3	36	48	27				
13	F-Tank	0	-17	34	28	VA			
14	F- Door-Fu-43	3	-16	24	29				
5	F- Door-Fu-45	0	12	24	30				

Date Reviewed. 2.23 00 RS Supervision



INSTRUMENT DATA									
1fg Eberline	Mfg Eberline	Mfg NeTech							
odel Sac-4	Model Sac-4	Model Electra							
Serial # 849	Serial # 837	Serial # 1233							
Cal Due <u>4-10-0</u> 0	Cal Due <u>5-17-0</u> 0	Cal Due 5-11 06							
Bkg OIZCPm	Bkg O3cpm	Bkg O.o cpm							
Efficiency 33%	Efficiency 33%	Efficiency Zo, 63%							
MDA (2.9 DPn	MDA 13,4 DPm	MDA 13.102m							
Mfg Eberline Model BC-4 Serial # GC-833 Cal Due 7-14-00 Bkg 40 cpm Efficiency 25%	Mfg Eberline Model BC-4 Serial # BC-8 77 Cal Due 4-12-00 Bkg 48 CPm Efficiency 25%	Mfg NE Tech Model Flecton Serial # 3265 Cal Due 7-3-00 Bkg 2.0 cpm Efficiency 21.01%							
MDA 9810Pm	MDA 106.5 0Pm	MDA 442 08m							
Comments Equipment Biased survey points									
l minute nats ar	nd swines – See ma	n tor locations							

Survey T	Type Contamination
Building	707
Location	Room 240 (K)
Purpose	Reconnaisance Level Characterization
RWP#	00 - 707 - 1204
	2-21-00 Time 1330

RCT Print name / Signature / Emp #

1 minute pats and swipes See map for locations

22 - Labeled 1100 cpm fixed

25 - Labeled 5000 cpm fixed

SURVEY RESULTS

i	VORVIDE TUBOURIU													
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha					
1	Duct	0	0	10	16	Door PL-104	0	-40	19					
2	Duct >2	0	-57	34	17	Door PL-104	3	12	29					
3	Fu-43	0	28	19	18	Door PL-104	0	-16	24					
4	Door Fu-43	0	32	19	19	Door PL-104	3	-16	29					
5	Duct >2	0	-24	48	20	Door PL-104	6	12	133					
6	Duct x	0	-8	34	21	P-trap	0	68	34					
7	Pump	0	16	15	22	Exhaust Duct	0	-40	see Note					
8	Top FU-41	0	16	53	23	Kump	0	-8	10					
9	Duct >2	0	-8	58	24	TOD HC PLIUY	3	8	38					
10	Door FU-41	\mathcal{O}	-32	38	25	Door HC PLIBY	9	20	see Note					
11	Duct	0	-20	290	26	TOP PL 104	0	8,	44					
12	TOP FU-51+52	0	-44	58	27	JCP PL 104	\Diamond	\Diamond	34					
13	TOP P1-104	0	20	34	28	Duct >2	6	24	15					
14	TOP PL-104	15	12	24	29	P-trap	0	8	10					
5	Duct >2	0	28	73	30	Duct >2	3	-4	0					

Date Reviewed. 2300 RS Supervision

ROCKY FLATS ENVI	RONMENTAL	TECHNOL	OCV SITE
	EF CAS STOCKEDS AT TAKE	* ECALLY OF	OUI SIIE

RADIOLOGICAL SAI	1-1	, 1
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				owing	Surv	ey Points			
#	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alph	l Swij a #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
31	Door Fu-45	0	-40	0	61				/
32	Top Fu-45	0	-16	24	62	2			/
33	Top F4-45	3	-32	24	63	3			
34	FAN	3	4	24	64				
35	Duct >2	0	-12	19	65				
36	Tank	0	-24	29	66				
37	Duct >2	3	40	53	67				
38	Door Fu-45	0	8	29	68				
39	Door Fu-45	0	24	34	69		/		
40	Top F4-45	0	48	24	70		/		
41	FAN	0	-16	5	71		/		
42	FAN	3	-4	24	72				
13	Top Fu-45	Ö	-16	10	73				
44	Top F4-45	0	36	15	74				
45	Top Fu-45	0	8	15	75	N/A			
46	END OF SURVEY				76				
47					77				
48					75				
49					79				
50		Λ			80			-	
51					81				
52					82				
53	1//2				83				$\neg \parallel$
54	10//				84				
55					85				
56					86				
57					87				
8					88				
59.	/				89				-
50 /					90				

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Cage

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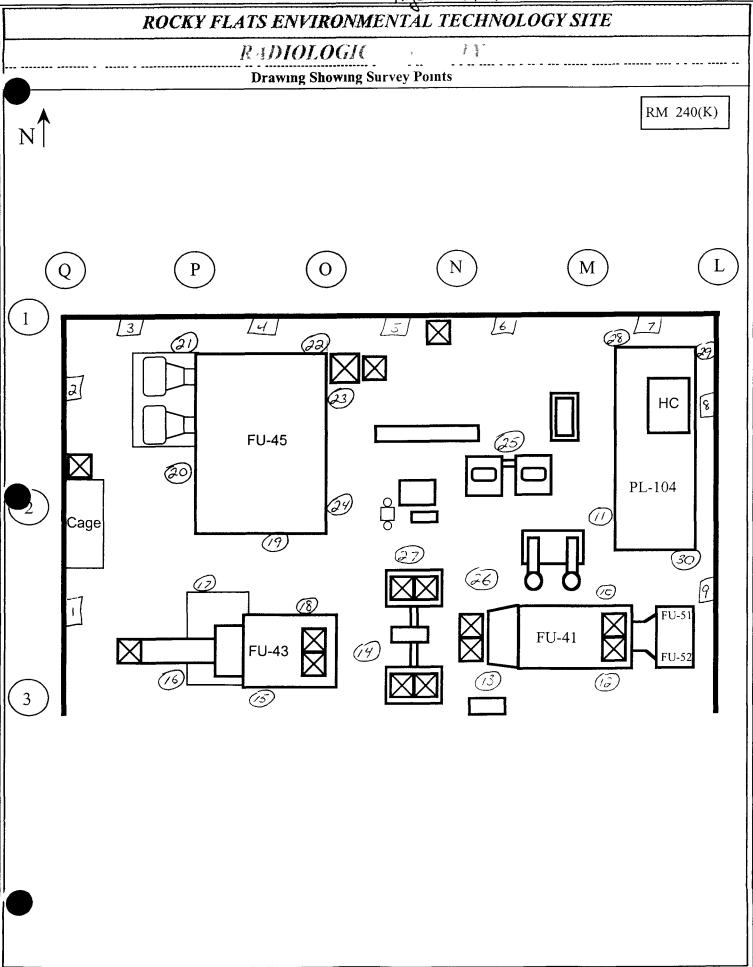
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	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE										
	IN	STRUMENT DAT	`A			_					
1fg _El	oerline	Mfg Eberline	Mf	g NeT	ech	Sur	ey Type	Contamination	n	·	
odel_S	Sac-4	Model Sac-4	Mo	del_Elec	tra	Build					
Serial #_a	849	Serial # <u>837</u>	Ser	ıal #_ <i>_/&</i>	233	Loca		om 240 (K			
Cal Due	<u>4-10-0</u> 0	Cal Due <u>5-/7-0</u>	o Cal	Due 5	-11 00	Purpo	ose Reco	onnaisance Level (Charac	terizati	on
Bkg	3 cpm	Bkg 03 cpn	Bkg	3 <u>40</u>	pr						
Efficienc		Efficiency 33%	Eff	iciency <u>.</u>	20 65Z	RW	P #	-707-1204			
MDA 139 don MDA 139 don MDA 58 2 don							2-20	OO Time	1600)	
Mfg	Eberline_	Mfg <u>Eberline</u>	Mf	g 丄							
Model	BC-4	Model BC-4	Mo	del_\							
Serial #	833	Serial # 872	Ser	ıal #\	\ /						-
Cal Due	7-14-00		Cal	Due _/	XA						
	spn_	_			7	DCT					
Efficienc	y <u>25%</u>			iciency	$\overline{}$	KCI	Print no	ame / Signatur		/ Emp	
		MDA 75 90/20		A		l	1 11116 116	inic / Signatu		/ Linp	, ,,
		g / Walls > 2 met			survev	points					
	•	id swipes See m				F					
1 1111111	are pars ar	id swipes See II	iap ioi	location	J113						
									 		
				SU	RVEY	RESU	LTS				
Swipe L	ocation\Desc	ription	Rem	ovable	Total	Swipe	Location\1	Description	Remo	ovable	Total
# (Res	sults in DPM	(100cm ²)	Alpha	Beta	Alpha	#		PM/100cm ²)	Alpha	Beta	Alpha
1 ω	172		3	-24	19	16	С		3	36	-15
	172		0	32	5	17	C		3	0	ر ح
							***************************************	<u> </u>	<u> </u>		

Swipe	pe Location\Description Removable		Total	Swipe	Location\Description	Removable		Total	
#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
1	W>2	3	-24	19	16	С	3	36	-15
2	W>Z	0	32	-5	17	<u> </u>	3	0	<u>ئ</u>
3	w>2	0	-12	10	18	C	0	12	53
4	w>2	3	-16	-5 ⁻	19	С	3	40	-10
5	w>2	0	-/6	10	20	С	0	36	0
6	w>2	0	12	15	21		0	8	-5
7	W>2	0	32	10	22	C	0	28	-5-
8	ω >2	3	52	19	23	C	0	48	15
9	W>2	$\zeta_{\mathfrak{I}}$	-24	15	24	C	0	- 8	5
10	C	0	24	-5	25	С	6	() تى	5
11	C	0	12	0	26	C	3	44	24
12	C	3	24	Ó	27	C	0	16	10
13	С	0	0	34	28	C	0	16	24
14	C	0	48	19	29	C	0	-24	12
5	C	3	-12	24	30	C	0	24	/ɔ¯

Date Reviewed. 23.00 RS Supervision



SURVEY PACKAGE TRACKING FORM

Package ID· 99-0002		Building 707 Survey Unit N/A				
Survey Area: L						
Initiator/ Date	Release Date	Validation Date	Closure Date			
A 10/25/89	9/ 12/24/19	d- 4/25/cc	4/25/av do			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	002	Building 707		Type 3		
Survey Area L		Survey Unit N/A	1	Area (m²) 627		
			0, 2 nd floor of Building 707 Area is South of Columns posted as fixed contamination areas			
Survey Type			Classification			
RLC Survey X	FSS □		Class 1 □ Class 2 □ Class 3 □ Unknown X			
Random/Uniform Surface Activity Measurements	Random/Uniform Surface Activity Measurements Biased Surface Activity Measurements		Media Samples	Volumetric Samples	Surface Activity Scans	
30	30 55		0	0	33	
Building.		Туре	Survey Area			
Survey Unit	-		Area (m ²)			
Survey Unit Desc	cription					
Survey Type			Classification			
RLC Survey □	FSS 🗆		Class 1 □ Class 2 □ Class 3 □ Unknown □			
Random/Uniform Surface Activity Measurements	Surface Activity Activity		Media Samples	Volumetric Samples	Surface Activity Scans	
			Survey Area			
Building		Туре		Survey Area		
Survey Unit		Туре	Area (m²)	Survey Area		
	cription	Туре	Area (m²)	Survey Area		
Survey Unit	eription	Туре	Area (m²) Classification	Survey Area		
Survey Unit Survey Unit Desc	FSS 🗆	Туре			Jnknown □	
Survey Unit Survey Unit Desc		Equipment Surface Activity Measurements	Classification		Jnknown □ Surface Activity Scans	
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface Activity	Classification Class 1 □ Class	2 □ Class 3 □ U Volumetric	Surface Activity	
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface Activity	Classification Class 1 □ Class	2 □ Class 3 □ U Volumetric	Surface Activity	
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements	FSS Biased Surface Activity	Equipment Surface Activity Measurements	Classification Class 1 □ Class	2 □ Class 3 □ U Volumetric Samples	Surface Activity	
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class	2 □ Class 3 □ U Volumetric Samples	Surface Activity	
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class	2 □ Class 3 □ U Volumetric Samples	Surface Activity	
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description Survey Type RLC Survey RLC Survey	FSS Biased Surface Activity Measurements cription	Equipment Surface Activity Measurements Type	Classification Class 1 Class Media Samples Area (m²) Classification Class 1 Class	2 Class 3 U Volumetric Samples Survey Area	Surface Activity	
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description Survey Type	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 □ Class Media Samples Area (m²)	2 Class 3 U Volumetric Samples Survey Area	Surface Activity Scans	

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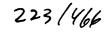
SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707
Survey Area: L	Survey Unit: N/A
Survey Unit Description: SOUTHERN PORTIC 707 AREA IS SOUTH OF COLUMNS M-3, N-3, ARE POSTED AS FIXED CONTAMINATION AREA	O-3, P-3 BUILDING 707 RADIOLOGICAL AREAS
Building Information:	
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey □
Building Type Type 1 Type 2 Type 3 X	
Classification Class 1 🗆 Class 2 🗖 Class 3 🗖 Un	ıknown X
Contaminants of Concern Plutonium X Uranium X	Other 🔲
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlinstrumentation may be required for access into	
Special Safety Precautions: Access to overhead Review RWP requirements and surveys prior to overheads Special security requirements for ac	entry Use caution when working in
Isolation Controls:	
Level 1 🗖 Level 2 🗖 N/A X	
Labeling Requirements: NONE	
Survey Package Implementation:	
	-
	_

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Package ID: 99-0	002	Building 707			
Survey Area L		Survey Unit N/A			
Survey Unit Desc Columns M-3, N-3	ription: Southern portion of room 3, O-3, P-3 Building 707 radiological	240, 2 nd floor of Building 707 Area is South of areas are posted as fixed contamination areas			
	Mınımum Survey/Sampling I	Measurement Requirements			
Measurement	Number and Type	Comments			
Surface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1			
Measurements	30 <u>unbiased</u> survey points uniformly di throughout the area	SEE NOTE 2			
	25 biased survey points at the following	SEE NOTE 3			
	locations	SEE NOTE 4			
	- Points around floors adjacent to in contaminated equipment (where a such as glycol P-traps (plenums), pumps, etc	ccessible)			
	- Point near each airlock to the plen	ums			
	- Near waste drum storage				
	- Other areas of potential concern be RCT judgement/experience	ased on			
	CEILINGS/WALLS > 2 meters				
	30 biased surveys (divided evenly betwand ceiling when possible) with focus of following areas				
	- Walls behind process lines				
	- Tops/sides of plenums				
	- Stained or discolored areas				
	- Areas around pipe or other penetra	ations			
	EQUIPMENT				
	45 <u>biased</u> survey points on equipment vor more samples from	vith one			
	- Equipment which has visible leaks contained spills beneath them	s or			
	- Survey points at exhaust ducts				
	- 5 survey points on top of overhead (where locations are accessible)	d piping			
	- Other areas of potential concern by RCT judgement/experience	ased on			

Package ID 99-00	002	Building 707				
Survey Area: L		Survey Unit N/A				
			floor of Building 707 Area is South of e posted as fixed contamination areas			
	Minimum Survey/Sampling I	Measurei	ment Requirements			
Measurement	Number and Type		Comments			
Surface Scanning	FLOORS/WALLS < 2 meters		SEE NOTE 1			
	55 1 m ² surface scans shall be taken at location identified for surface activity	each	SEE NOTE 2			
	measurements Locations found above	the	SEE NOTE 3			
	DCGL shall be documented		SEE NOTE 4			
	CEILINGS/WALLS > 2 meters					
	NONE					
	EQUIPMENT					
	NONE					
Media Samples	NONE					
	(2 nd Floor of 707 does not have painted	floors)				
Volumetric	NONE					
Samples						



Scans

Isotopic Gamma

NONE

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID. 99-0002	Building 707						
Survey Area: 🛕	Survey Unit N/A						
Survey Unit Description: Southern portion of room 240, 2 nd floor of Building 707 Area is South of Columns M-3, N-3, O-3, P-3 Building 707 radiological areas are posted as fixed contamination areas							
Survey/Sample	ng Instructions						
NOTE 1 D	1 2 000 165 000 07 02						

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

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Package ID: 99-0002	Building 707
Survey Area: L	Survey Unit N/A

Survey Unit Description: Southern portion of room 240, 2nd floor of Building 707 Area is South of Columns M-3, N-3, O-3, P-3 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received



Page supered of 01/18/00 Chaff 3 SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID · 99-0002	Building 707
Survey Area L	Survey Unit N/A

Survey Unit Description: Southern portion of room 240, 2nd floor of Building 707 Area is South of Columns M-3, N-3, O-3, P-3 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² soan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to super usory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building 707
Survey Area. L	Survey Unit N/A

Survey Unit Description: Southern portion of room 240, 2nd floor of Building 707 Area is South of Columns M-3, N-3, O-3, P-3 Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS:

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4- Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID:	99-0002	Building 707					
Survey Area	L	Survey Unit N/A					
Change #	Description		Initiator/ Date	PRE			
/	Added page GA		91 12/21/99	ME			
	1 - / / / (1 /)	CAN B MBAS.	10/2/19	ATTER OF			
2	Replaced pg 6 to elim. A	con & mass.	Cor of Inlan	H/F			
3	Borbard or co	e. 10 pm	1000 1000	HAS			
4	Replaced po Thath pages 9 to with pages 9	theorgh / 9G	3/29/00	EBY			
· · · · · · · · · · · · · · · · · · ·	,						
	 		-				
			 				

SURVEY PACKAGE VALIDATION CHECKLIST FORM

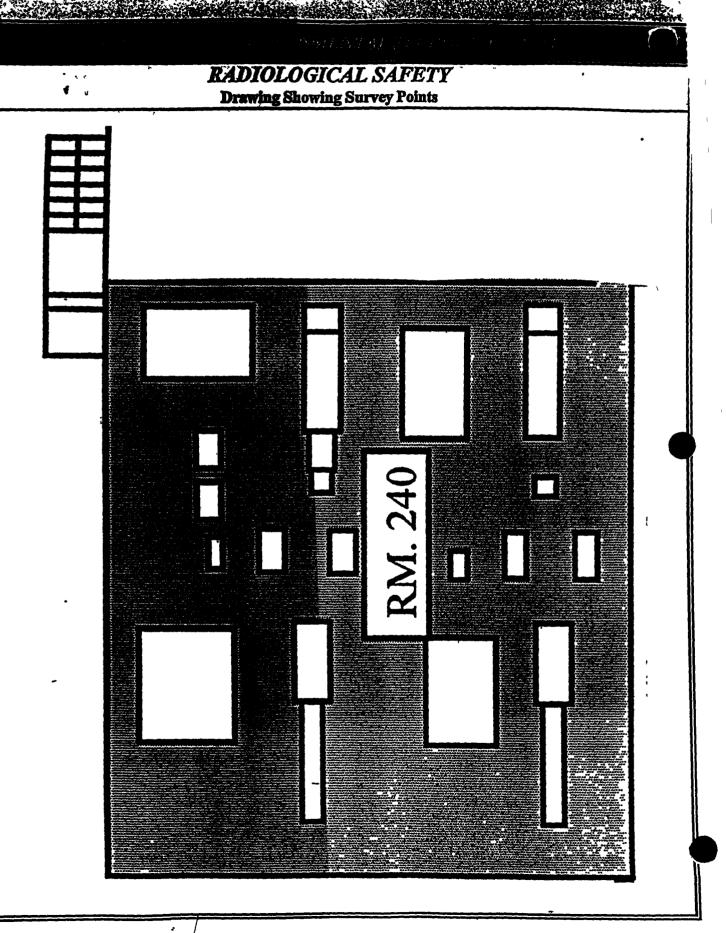
Survey Area: L Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey □ All Documentation Reviewed for Completion RCT Supervisor Scan Surveys A Total Activity Surveys Exposure Rate Surveys Media Samples Volumetric Samples All Surveys and Samples Accounted For Scan Surveys Total Activity Surveys A All Surveys and Samples Accounted For Scan Surveys Total Activity Surveys A Removable Surveys A A A A A A A A A A A A A	Survey Type · Reconnaissance Level Characterization Survey All Documentation Reviewed for Completion Scan Surveys Total Activity Surveys	X Final Status Surve	
All Documentation Reviewed for Completion Scan Surveys Total Activity Surveys Exposure Rate Surveys Media Samples Volumetric Samples All Surveys and Samples Accounted For Scan Surveys Total Activity Surveys All Surveys All Surveys All Surveys All Surveys All Surveys All Surveys All Surveys All Surveys All Surveys All Activity Survey	All Documentation Reviewed for Completion Scan Surveys Total Activity Surveys	RCT	
Scan Surveys Total Activity Surveys Exposure Rate Surveys A Removable Surveys Media Samples Volumetric Samples A A A A A A A A A A A A A	Scan Surveys Total Activity Surveys		PRE J-
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Exposure Rate Surveys Removable Surveys Media Samples Volumetric Samples All Surveys and Samples Accounted For Scan Surveys Total Activity Surveys Exposure Rate Surveys AREmovable Surveys Media Samples Volumetric Samples VA Volumetric Samples VA Comments		1	
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All Surveys and Samples Accounted For RCT Supervisor Scan Surveys A Total Activity Surveys Exposure Rate Surveys A Removable Surveys Media Samples Volumetric Samples NA Comments	-	n'A	N/>
Scan Surveys Total Activity Surveys Exposure Rate Surveys Removable Surveys Media Samples Volumetric Samples NA NA Comments	Volumetric Samples	2/21	AA
Total Activity Surveys Exposure Rate Surveys Removable Surveys Media Samples Volumetric Samples VA Volumetric Samples	All Surveys and Samples Accounted For	· ·	PRE
Exposure Rate Surveys Removable Surveys Media Samples VA Volumetric Samples VA VA Comments	Scan Surveys	1	A
Removable Surveys Media Samples Volumetric Samples NA NA NA NA Comments	Total Activity Surveys	1	d-
Media Samples Volumetric Samples NA NA Comments	Exposure Rate Surveys	NA	пА
Volumetric Samples VA VA VA Comments	Removable Surveys	1	d-
Comments NA NA	Media Samples	JA	NΑ
	Volumetric Samples	NA	NA
		y diagrams	

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Rev 9/99

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Mfg	Mfg			Survey Tv	ne:				
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Serial #	Serial #	Serial	#						
Cal Due		Cal D	ue						
ła	Bkg.			Turpose _					
Bkg Efficiency			ency	RWP#					
MDA	MDA			KWI # —					
MIDA	MDA		·	Data		Time			
Mfa	Mfg	Mfa		Date		Time			
Mfg Model	Model		1	RCT		/	1		
Serial #		Serial	#	-	rint name	Signat	ure Emp#		
Cal Due			ue	1	init namo	Oignat	are Emp #		
Dia Due				RCT	ı	<i>t</i>	1		
Bkg Efficiency		\ Effici	ency	- i — — — — — — — — — — — — — — — — — —	Print name	Signat	ure Emp #		
MDA		Ellici	·	1	Thit haine	Gigilat	uic Emp #		
WIDT		7011		· L					
PRL#:		\							
Comments		\							
Comments	<u></u>		/				······································		
	·								
			SURVEY	KESULIS					
REMOVABLE	REMOVABLE	DIRECT	DIRECT	REMOVABLE	REMOVABLE	DIRECT	DIRECT		
Alpha	Beta DDM//100 cm²	Alpha DBM/100 cm²	Beta DPM/100 cm²	Alpha DPM/100 cm²	Beta	Alpha	Beta DDM/100 cm²		
Alpha DPM/100 cm ² 1		Alpha DPM/100 cm ²	DPM/100 chu²	DPM/100 cm ²	Beta DPM/100 cm ²	Alpha DPM/100 cm ²	Beta DPM/100 cm ²		
DPM/100 cm ²	DPM/100 cm ²			DPM/100 cm ² 26 27					
	DPM/100 cm ²			DPM/100 cm ² 26 27 28					
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DPM/i00 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	DPM/100 cm ²			DPM/i00 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48					
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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

	NSTRUMENT DATA		Survey Type Contamination
fg Eberline	Mfg Eberline	Mfg NeTech	
odel Sac-4		Model Electra	Building 707
Serial # <u>849</u>	Serial # 837	Serial # 3265	
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due <u>7-3-00</u>	Purpose Reconnaisance Level Characterization
Bkg O 1 cpm	Bkg <u>ao cem</u>	Bkg 00 c/m	
Efficiency 33%	Efficiency 33%	Efficiency 21 01%	RWP# 00 - 707 - 1204
MDA 11,5 dpm		MDA 12.9 DPM	Date <u>2-17-00</u> Time <u>1300</u>
Mfg Eberline	Mfg Eberline	Mfg	
Model BC-4	Model BC-4	Model	
Serial #_BC-833	Serial # BC 872	Serial #_N/	
Cal Due 7-14-06		Cal Due A	
Bkg 46 cpm		Bkg	RCT
Efficiency 25%		Efficiency	Print name / Signature / Emp #
MDA 1045 0Pm		M2DA	2.5
Comments Floor	r / Walls < 2 meters	Unbiased survey	points
1 m ² scans, 1 m	ninute pats and swipe	es See map for lo	ocations

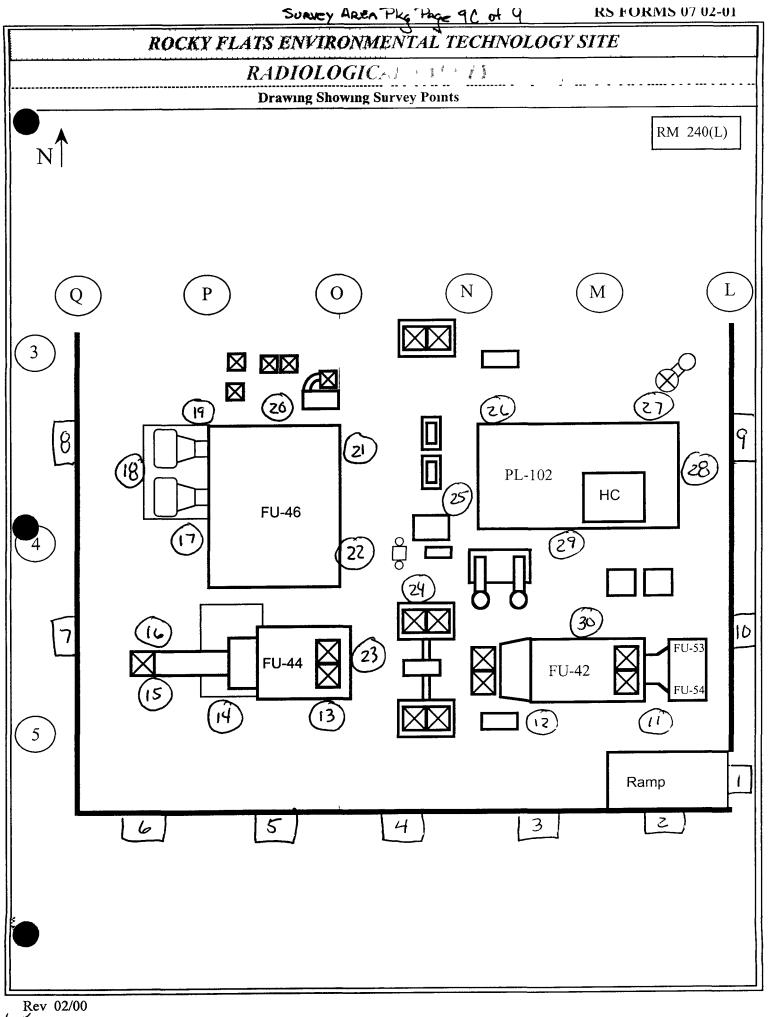
SURVEY RESULTS

lt									
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	72	0	20	5	16	F	0	16	34
2	42	٥	-8	24	17	F	3	24	10
3	۷ ک	0	-12	19	18	F	0	-20	0
4	۷ ک	3	-8	24	19	F	0	١٢	24
_ 5	٧ ٦	0	-24	43	20	F	9	-16	38
_ 6	42	0	4	24	21	F	0	-20	24
7	F	0	-24	19	22	F	0	72	15
8	F	0	φ,	5	23	F	0	0	19
9	E	0	20	10	24	F	0	56	34
_10	F	0	40	29	25	F	<i>و</i> ا	0	5
11	F	3	12	29	26	F	3	-20	24
12	F	0	8	24	27	F	0	-20	24
13	F	0	-8	24	28	F	3	-12	43
1 <u>4</u>	F	0	40	15	29	E	0	0	38
5	F	0	52	15	30	F	0	8-	52

Date Reviewed 2300 RS Supervision.

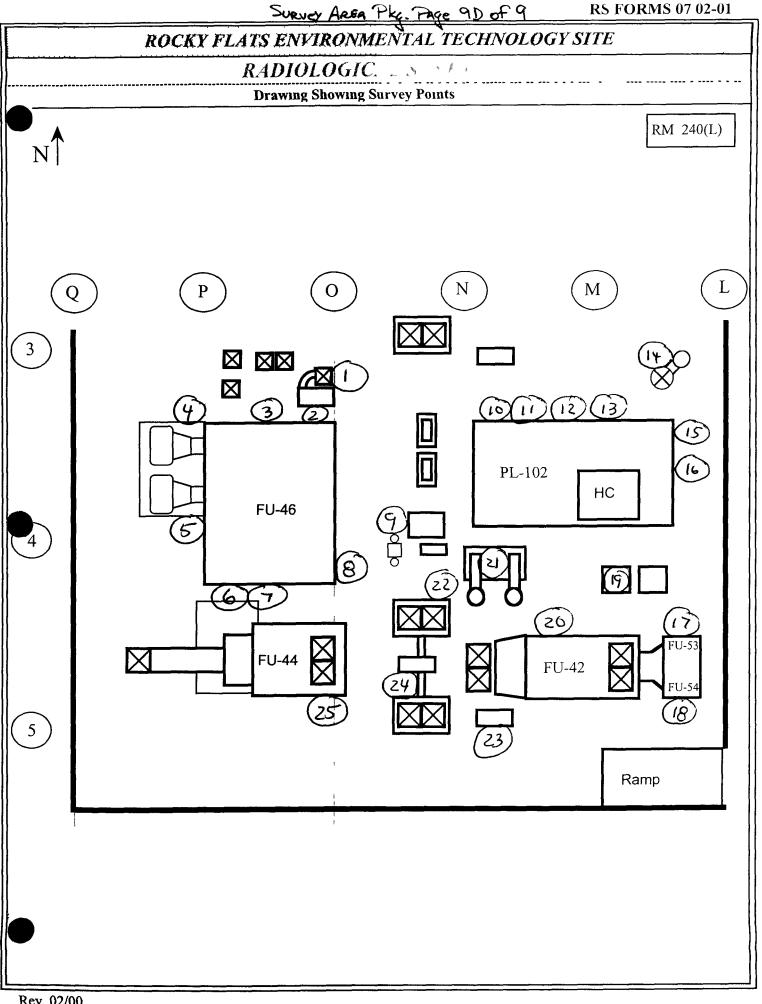
	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE											
	IN	STRUMENT DA	ТА	1152	<u>+</u>							
1fg	Eberline			g NeT	ech	Sur	vey Type _ Contamin	ation				
_	el Sac-4	Model Sac-4		del Elec		Build	ling 707					
	1#849			1al # <i>[</i>	233	1	tion Room 240	(
	Due <u>4-10-0</u> 0			Due <u>5</u>		Purpo	ose Reconnaisance L	evel Charac	terizat	10n		
	O,4 cpm	Bkg OI CPM		g <u>0.0</u>		DW	P#	- 120	(_)			
	nency 33%	Efficiency 33%		iciency i		'	T#	1 20	<u> </u>			
MIDA	1 14.8 DPM	MDA 115 0A	יי ואוד	DA <u>13.</u>	1 000	Date	2-18-00 Ti	me <u>0</u> 8	50			
Mfg	Eberline	Mfg Eberline	Mf	g		<u> </u>						
	lelBC-4		_	del	$-\!$							
	al# <u>BCE33</u>	Serial # BC-872		nal #								
	Due <u>7-14-00</u>	Cal Due <u>4-12-∞</u>		Due /	<u> </u>							
	<u> 4ч срт</u> nency <u>25%</u>			g iciency		RCT						
		MDA 104 5 p2	-	/			Print name / Si	gnature	/ Emp) #		
		$\frac{1}{\log / \text{Walls}} > 2 \text{ me}$			survev	points						
		nd swipes See i				po mio						
		used on 2								******		
				<u>SU</u>	RVEY	RESU	LTS					
Swipe	Location\Desc	cription	Rem Alpha	ovable Beta	Total	Swipe	Location\Description	Rem Alpha	ovable Beta	Total		
#	(Results in DPM	/100cm²)	O		Alpha	#	(Results in DPM/100cm ²)	3	-12	Alpha		
<u>1</u>	72 72		0	-8	15	16	C	3	-8	48		
2	<u> </u>		0	12	15	17			-4	34		
3				-40	15	18	<u> </u>		 	10		
4	>2		0	 	29	19	C	0	-56	15		
5	フこ		0	-8	24	20	C	0	-4	49		
_6	>2		0	8	19	21	C	0	8	34		
7	72		3	-4	29	22	С	0	-32	24		
8	72		0	-8	24	23	С	0	4	16		
9	72		3	4	29	24	C	9	-12	34		
10	>2	_	3	4	19	25	C	3	-16	15		
11	C		0	-24	24	26	С	0	-29	24		
12	С		0	16	15	27	С	0	-8	34		
13	С		15	36	15	28	C	0	-12	24		
14	C		0	24	39	29	C	U	4	0		
5	С		0	4	29	30		0	20	29		

Date Reviewed 2300 RS Supervision



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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE										
	INS	TRUMENT DA	ΤA							
		Mfg Eberline	_ Mf	g NeT	ech`		vey Type Contamination			
		Model Sac-4	_	del Elec		Build		18-10 Spc		
		Serial # <u>837</u>	-	nal #			tion Room 240 JF Ose Reconnaisance Level (horac	(L)	
		Cal Due <u>5-17-60</u>	-	Due <u>5</u>		Purpo	ose Recommandance Level C	Harac	terizati	IOII
-		Bkg <u>O 1 cpm</u> Efficiency 33%		g <u>00</u> iciency		RW	P# 00-707 - 120	24		
		MDA 11.5 DP)A 13		1				
			_		· <u>v. v.</u>	Date	2-18 OC Time	120	<u> </u>	
Mfg		Mfg <u>Eberline</u>	_ Mf		$- \not$					
		Model <u>BC-4</u>	_	del nal#//	1/.					~
5		Serial # <u>18C-872</u> Cal Due <u>4-12-</u> 0	-	Due	4					
		Bkg <u>46 cpm</u>	Bk	/		7.00				
		Efficiency 25%	-	icrency		RCT	Print name / Signatur	re	/ Emp	
MDA	1 1024 DPm	MDA <u>104,5 08</u>	m MJ	δA	·	<u> </u>			, 2,,,,,	
Comn	nents <u>Floor /</u>	Walls < 2 mete	rs Bı	ased su						
_1 m	n ² scans, 1 mir	ute pats and sw	1pes	See ma	ap for l	ocation	ns			
				CIT	RVEY	DECL	I TC			
			r			KESU.	<u> </u>			
Swipe #	Location\Descri (Results in DPM/1	ption 00cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	F- Duct		3	12	15	16	F- P-trap	0	16	39
2		ap Filter		0	34	17	F- FU-53	3	8	15
3	F- Patro	ap	0	4	10	18	F- F4-54	6	24	15
4	F- FAN	~\rangle	0	32	10	19	F- FAN	0	48	5
5	F- FAN		0	48	15	20	F- Drain	O	44	44
6		r F4-46	0	12	10	21	F- FAN	3	0	5
7		F4-46	0	48	29	22	F- Drain	0	- 2	19
8	F- Doo	- ,	0	24	0	23	F- Pump	0	20	29
9	F- Pum	C/D/ 7-	8-5	4	24	24	F- Tank	3	4	19
	F- Door	_	3	4	34	25	F- Door Fu-44	3	40	0
11	F- Door		3	-24	24	26	END OF SURVEY		10	
12	F- Door		3	-4	34	27	or samely			
13	F- Door	\circ	0	-20	53	28	1//2			
	F- Pipe		9	-12	19	29	17/1			
5		- PL-102	0	-8	19	30				
		23.00 RS SI								



Rev 02/00

RO	CKY FLATS E	NVIR	ONM.	ENT	AL TECHNOLOGY SITI	 र		
*	MENT DATA			٦	Cantananation			
		fg NeT			vey Type Contamination	<u> </u>		<u></u>
odel Sac-4 Mod Serial # 849 Serial	el Sac-4 M	odel <u>Elec</u>	tra	Build	ling 707 L tion Room 240 (9) 9H 0	0	
Cal Due <u>4 10-00</u> Cal I	Due 5-17-150 Ca	il Due	1/ <i>E</i>) 1-J9-00	1	Reconnaisance Level C			ion
Bkg O, 2 cpm Bkg				1				=
Efficiency 33% Effic	nency 33% Ef	ficiency	20,869	3	P# <u>JO-707-1204</u>			
MDA 12.90fm MDA				Date	e <u>2-21-00</u> Tyme _	1100	<u></u>	
Mfg Eberline Mfg	Eberline M	fg <i>NE 1</i>	ECH					
Model <u>BC-4</u> Mod Serial # <u>833</u> Seria	el_BC-4 Me	odel <u>/-/</u>	ara_	RCI	Print name Signatu			
II Cal Due $i=14$ (10) Cal I	\mathcal{L}_{1}	1 Due <	1/ 00	ı	•	re		
Bkg 40c2m Bkg Efficiency 25% Effic	48 cpm Bk	g 4.	OCPM	A DCT	House 11.			
Efficiency 25% Effic	iency 25% Ef	ficiency_	20,63	RCI	Print name Signature	Š		
MDA <u>98,1 DPM</u> MDA	1 1065 OM M	DA <u>5</u>	5. 2.UH	<u>'</u>				
Comments Equipment				No	OTE (B)10,000 REMV PIR	E (34	RBAS)	111
1 minute pats and swi				la i . C				140,00
Note (5) contaminat	Drew out	alpha	anli	i	units in dom lu	5000	LIXED	10900
- January	a precionally		RVEY			f,	cd = +	x ee/
Swipe Location\Description	Ren	novable	Total	Swipe	Location\Description	Rem	ovable	Total
# (Results in DPM/100cm	2 ₎ Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
1 POOR	3	20	27	16	DUCT	0	-8	18
2 FUS4	0	16	37	17_	PC102 (TOP)	0	1-4_	/8
3 DOOR FU53/S	4 0	8	14	18	PCIOZ (TOP)	0	16	50
4 DUCT FU4Z	0	4	18	19	DUCT	0	-4	23
5 MOTOR	0	80	18	20	DOOR	0	4,	23
6 DOOR PCID	2 0	-4	18	21	MOTOR	0	-24	23
7 DOOR PCIC	2 6	40	69	22	DOOR (FU-44)	0	-44	18
8 PC/02 TOP	3	-50	14	23	Duct (FU44)	0	36	27
9 PC102 FOR	DUCT O	48	955 55	24	DOOR (FU46)	0	24	14
10 PC/02 TOP/		24	37	25	FU46	3	-12	55
11 DOOR	0	-4	23	26	DOOR (FU46) 3	J 12	8	Cp
12 DOOR	Ð	-36	27	27	FU48	0	-16	18
13 DOOR	0	1-4	23	28	DUCT	0	32	5
14 DOOR	0	1-16	27	29	DUCT	3	48	27
5 PIPE (CONTAI	YINATION SEE	NOT	E-15	30	MOTOR (FU46	0_	14	32
	· <u>OO</u> RS Supervi	sion.	Sllu	M nt Nar	ne Signature			
					2-0-1444			

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGIC A SAFET.

						Points			
ipe #	Location\Description (Results in DPM/100cm ²)	Reme Alpha	ovable Beta	Total Alpha		Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
31	A 72	0	4	46	61				
32	12 23-00	\mathcal{D}	24	55	62				
33		0	-28	27	63				
34	PLEUMILTOP) FU4672	0	28	18	64				
35	DUCT >2	0	4	24	65				
36	DUCT 72	0	-32	67	66				
37	DUCT >2	3	-8	24	67				
38		0	64	44	68				
39	PUCT	0	-20	58	69				
40	PIPE-72	0	20	24	70				
41	PIPE 72	<u>3</u>	52	34	71				
42	PIPE > 2	0	40	29	72				
3	DUCT >2	0	-16	24	73				<u> </u>
_4	DUCT>2	0	-36	10	74				
45	DUCT FU46 72	0	24	48	75				
46	END OF SURVEY				76	<u> </u>			
47					77				
48					75				
49					79	\			
50					80	300			
51					81				
52					82		$-$ \		
53	V/+				83				
54					84			\ 	
55		\backslash			85			$\rightarrow \downarrow \downarrow$	
56		\rightarrow			86				
57			$\overline{}$		87				$\overline{}$
<u>8</u>			\longrightarrow	$\left\langle \cdot \right $	88				$\downarrow \downarrow$
59				\forall	89				
60				1	90				

Bob, First off, DO NOT sign where the little arrow stuck on package – that is for Eric
The following is regarding survey area "L" survey point #15 for equipment
1) Are the values for removable and contamination in units of dpm or cpm? (They should be specified in comments where note is written)? Kimmed & Tyed. Comments
2) I am assuming that the values given for point #15 were not obtained from the instruments used for the rest of the surveys but were read off of the posted information (from a different instrument at a different time), correct? 3) This area is posted as a contamination area, correct? And, it was posted prior to us doing RLC surveys,
right? RBA- Contained area is a HCA - was posted prick
right? RBA - Contained area on AHCA - was posted prior to us doing the studys, right? RBA - Contained area on AHCA - was posted prior Comment. 4) Are the fixed values for alpha or beta or alpha+beta? - Just Alpha - put in Comment.
Please page 212-3244 if we need to discuss THANKS!
-James
Also – please forward to Eric McKamey Eric will need to initial the change where the survey data wand

Also note that these are ones. copies of plat data

SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002		Building 707	
Survey Area: M		Survey Unit· N/A	
Initiator/ Date	Release Date	Validation Date	Closure Date
M 10/25/98	Cff 12/21/99	KDM 6/14/00	RAM 6/14/00

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	0002	Building 707		Type 3		
Survey Area M		Survey Unit N/A	1	Area (m ²) 634		
		OF MODULE A (ROixed contamination	OOM 100) EXCLU areas	DING ISOPRESS F	ROOM Building	
Survey Type			Classification			
RLC Survey X	FSS □		Class 1 Class	2 □ Class 3 □ Unknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
45	47	40	4	0	62	
Building		Туре		Survey Area		
Survey Unit			Area (m²)			
Survey Unit Desc	cription					
Survey Type			Classification			
RLC Survey 🗆	FSS 🗆		Class 1 Class	2 □ Class 3 □ U	Jnknown □	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
	i					
Building		Туре		Survey Area		
Survey Unit			Area (m²)			
Survey Unit Desc	cription					
Survey Unit Desc Survey Type	eription		Classification			
Survey Type RLC Survey □	FSS 🗆		Classification Class 1	2 □ Class 3 □ U	Jnknown □	
Survey Type		Equipment Surface Activity Measurements		2 Class 3 U Volumetric Samples	Jnknown □ Surface Activity Scans	
Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Activity	Class 1 Class	Volumetric	Surface Activity	
Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Activity	Class 1 Class	Volumetric	Surface Activity	
Survey Type RLC Survey Random/Uniform Surface Activity Measurements	FSS Biased Surface Activity	Activity Measurements	Class 1 Class	Volumetric Samples	Surface Activity	
Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building	FSS Biased Surface Activity Measurements	Activity Measurements	Class 1 □ Class Media Samples	Volumetric Samples	Surface Activity	
Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit	FSS Biased Surface Activity Measurements	Activity Measurements	Class 1 □ Class Media Samples	Volumetric Samples	Surface Activity	
Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description Survey Type RLC Survey	FSS Biased Surface Activity Measurements	Activity Measurements	Class 1 Class Media Samples Area (m²)	Volumetric Samples Survey Area	Surface Activity Scans Jnknown	
Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description	FSS Biased Surface Activity Measurements cription	Activity Measurements	Class 1 Class Media Samples Area (m²)	Volumetric Samples Survey Area	Surface Activity Scans	

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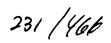
SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building. 707
Survey Area: M	Survey Unit. N/A
Survey Unit Description: Inside of Module A (Roc RADIOLOGICAL AREAS ARE POSTED AS FIXED CO	
Building Information:	
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey 🗆
Building Type Type 1 Type 2 Type 3 X	
Classification Class 1 🗆 Class 2 🗆 Class 3 🗀 Un	known X
Contaminants of Concern Plutonium X Uranium X	Other 🗆
Justification for Classification: N/A	
Special Support Requirements: Ladder, manli instrumentation may be required for access into	· · · · · · · · · · · · · · · · · · ·
Special Safety Precautions: Access to overhead Review RWP requirements and surveys prior to overheads	· ·
Isolation Controls:	
Level 1 □ Level 2 □ N/A X	
Labeling Requirements: NONE	
Survey Package Implementation:	

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Package ID: 99-0	002	Building	707
Survey Area: M		Survey U	nıt N/A
•	•	`	M 100) EXCLUDING ISOPRESS D AS FIXED CONTAMINATION AREAS
	Minimum Survey/Sampling N	1easurem	ent Requirements
Measurement	Number and Type		Comments
Surface Activity	FLOORS/WALLS < 2 meters		SEE NOTE 1
Measurements	45 <u>unbiased</u> survey points uniformly dis	tributed	SEE NOTE 2
	17 <u>biased</u> survey points at the following locations		SEE NOTE 3 SEE NOTE 4
	- 3 points adjacent to <u>each</u> stokes pu	mp	
	- 3 points around floor near GB A-1	5	
	- 2 points near c-cell 530		
	- 2 points near criticality drain locati	ons	
	- 2 points near entrance to isopress r		
	- 2 points near Soft Sided Containment near GB A-20/A-30		
	CEILINGS/WALLS > 2 meters		
	30 biased surveys (divided evenly between and ceiling where possible) with focus of following areas		
	- Walls behind process lines		
	- Ceilings above GB's		
	- Ceilings/walls adjacent to c-cells/to	ents	
	- Stained or discolored areas		
	- Walls/ceilings near GB's mounted walls	high on	
	- Areas around pipe or other penetra	tions	
	EQUIPMENT	Ì	
	40 <u>biased</u> survey points on equipment wor more samples from	ith one	
	- Each GB "section" extending from (center) GB line	the main	
	- Equipment in the vicinity of the stopumps	kes	
	- Gloveboxes which have visible lea contained spills beneath them	ks or	
	- 2 surveys at 2 different room exhau	ist ducts	
	- Bag-in/bag out ports to GB lines		
	- 5 survey points on top of overhead (where locations are accessible three		



Package ID: 99-00	002	Building	y 707
Survey Area: M		Survey l	Unit N/A
•	-	,	OM 100) EXCLUDING ISOPRESS ED AS FIXED CONTAMINATION AREAS
	Minimum Survey/Sampling	Measurei	ment Requirements
Measurement	Number and Type		Comments
Surface Scanning	FLOORS/WALLS < 2 meters		SEE NOTE 1
	62 1 m ² surface scans shall be taken at location identified for surface activity	each	SEE NOTE 2
	measurements Locations above the D	CGL are	SEE NOTE 3
	to be documented CEILINGS/WALLS > 2 meters		SEE NOTE 4
	NONE		
	EQUIPMENT		
	NONE		
Media Samples	Total of 4 biased (paint) media sample follows - 1 sample near one of the entrance module - 1 sample near the HCA around or stokes pumps - 1 sample beneath GB A-15 (EU or 1 sample near a criticality drain	s to the	SEE NOTE 5
Volumetric Samples	NONE		
Isotopic Gamma Scans	NONE		

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Page superceded 01/18/00 (PAGE 6 OF 9 SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (conf)

Package ID: 99-0002

Building 707

Survey Area: M

Survey Unit N/A

Survey Unit Description: INSIDE OF MODULE A (ROOM 100) EXCLUDING ISOPRESS ROOM BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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Package ID · 99-0002	Building 707
Survey Area: M	Survey Unit N/A

Survey Unit Description: INSIDE OF MODULE A (ROOM 100) EXCLUDING ISOPRESS ROOM BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha
 then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to
 media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

Package ID: 99-0002	Building 707
Survey Area M	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE	A (ROOM 100) EXCLUDING ISOPRESS ROOM

BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002

Building 707

Survey Area: M

Survey Unit N/A

Survey Unit Description: INSIDE OF MODULE A (ROOM 100) EXCLUDING ISOPRESS ROOM BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected.
- Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4- Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e g, indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0002		Building 707				
Survey Area M	Survey Unit N/A					
Change #	Description		Initiator/ Date	PRE		
1 Added pa	292 GA		9) 12/21/9	9 1/2		
2 Deleted	Det to chair		MS 81 12/21	4 MG	8	
2 Rept. Py 6	to climinate	Ret to spec. of	no 1970/17	00 11/3		
	G GA W/AU			no Offe		
4 REPLACED BY	19 WITH PGS	9 тикььы 9 І	(A-4/27/0	o EDM		
	·					
		1				

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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID • 99-0002	Buil	ding 707					
Survey Area: M	Sur	vey Unit N/A					
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey □							
All Documentation Reviewed for Completion		RCT Supervisor	PRE				
Scan Surveys		l	b				
Total Activity Surveys		Ĵ	d-				
Exposure Rate Surveys		NA	NA				
Removable Surveys		ار	do				
Media Samples		Æ	EDM				
Volumetric Samples		NA	NA				
All Surveys and Samples Accounted For		RCT Supervisor	PRE				
Scan Surveys		S	d-				
Total Activity Surveys		1	d-				
Exposure Rate Surveys		NA	NA				
Removable Surveys		J	do				
Media Samples		092	EDM				
Volumetric Samples		NA	NA				
Comments			· · · · · · · · · · · · · · · · · · ·				

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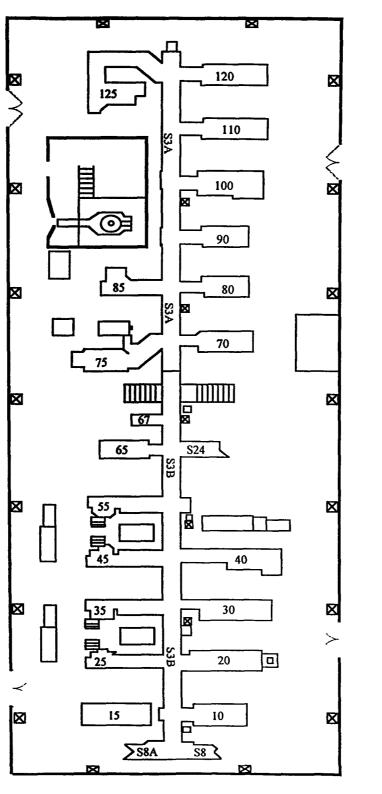
	h(A)/h(A) = h	1.5.11.5.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	THE CONTEST	 DNU406,111	XCIECNOL(OX	gar synne .	
\ n	NSTRUMENT	DATA			ina in laina da agri a a sa an antanististataini		and the state of t
Mfg	Mfg.			Survey Tv	pe:		
Model	Model			Building			
Serial #	rial # Serial # Serial #						
Cal Due	Cal Due		ie				· · · · · · · · · · · · · · · · · · ·
Bkg	Bkg.	Bkg					
Efficiency	Efficiency	Efficie	encv	- RWP#			
MDA	MDX	MDA					
				Date		Time	
Mfg	Mfg	Mfg					
Model	Model	Model		RCT	Print name	/	/
Serial #	Serial #	Serial	#	I	Print name	Signati	ıre Emp#
Cal Due	Cal Due	Cal Du	ıe			J	4 "
Bkg				RCT		<u>/</u>	
Efficiency	Efficiency	Efficie	ncy		Print name	Signatu	ire Emp #
MDA	MDA	MNQA		_		_	•
PRL#:							
			SURVEY				
REMOVABLE	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²	Alpha DPM/100 cm² 26 27	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm ²
3				28			
4				29		-	
6				31	/		-
7				32	/		
8				33	7		
9				34			
10			-	35			
11			******	36 37			
13				38	/		
14				39		\	
15				40			the ball book of the control of the
16				41		/	-
17			-	42			
18				44	-		
20				45			
21				46			
22		-		47		\	
23				48			\
24				49 50		-	
23						-	\
Date Reviewed:	R	S Supervision		int Name	/	Signature	Emp #

RADIOLOGICALSAFETY

Widnesday, ingguingolog, y styr

Drawing Showing Survey Points

MODULE A



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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

AfgEberlineMfgEberlineMfgNeTechModelSac-4ModelSac-4Model ElectraSerial # 849Serial # 837Serial # 31 Z6Cal Due 4-10-00Cal Due 5-12-00Cal Due 4 26-66Bkg 0.5 canBkg 0.1 canBkg 2.0 cpmEfficiency 33%Efficiency 33%Efficiency 21 09%MDA 15 6 domMDA 115 domMDA 94domMfgEberlineMfgEberline	IN	INSTRUMENT DATA							
Serial # 849 Serial # 837 Serial # 3126 Cal Due 4-10-00 Cal Due 5-17-00 Cal Due 4 26-60 Bkg 05 cam Bkg 01 cam Bkg 2.0 cpm Efficiency 33% Efficiency 33% Efficiency 2109% MDA 15 6 dpm MDA 115 dpm MDA 94dpm Mfg Eberline Mfg Eberline Mfg NE Tech	Ifg Eberline	Mfg Eberline	Mfg NeTech						
Cal Due 4-10-00 Cal Due 5-17-00 Cal Due 4 26-60 Bkg 0 5 com Bkg 0 1 com Bkg 2.0 cpm Efficiency 33% Efficiency 33% Efficiency 21 09% MDA 15 6 dom MDA 115 dom MDA 94 dom Mfg Eberline Mfg Eberline Mfg NE Tech	Model Sac-4	Model Sac-4	Model Electra						
Cal Due 4-10-00 Cal Due 5-17-00 Cal Due 4 26-60 Bkg 0 5 com Bkg 0 1 com Bkg 2.0 cpm Efficiency 33% Efficiency 33% Efficiency 21 09% MDA 15 6 dom MDA 115 dom MDA 94 dom Mfg Eberline Mfg Eberline Mfg NE Tech	Serial # 849	Serial #_837	Serial # 31 Z6						
Bkg 05 com Bkg 01 com Bkg 7.0 cpm Efficiency 33% Efficiency 33% Efficiency 21 of % MDA 15 6 dom MDA 115 dom MDA 94 dom Mfg Eberline Mfg Eberline Mfg NE Tech	Cal Due 4-10-00		Cal Due 4 26-60						
Efficiency 33% Efficiency 33% Efficiency 21 of % MDA 15 6 dom MDA 115 dom MDA 94 dom MDA 94 dom Mfg Eberline Mfg NE Tech	Bkg 05 con		Bkg Z.o cpm						
MDA 15 6 dom MDA 115 dom MDA 94 dom Mfg Eberline Mfg Eberline Mfg NE Tech			Efficiency 21 09%						
Mfg Eberline Mfg Eberline Mfg NE Tech			MDA <u>9422m</u>						
Serial # 872 Serial # 833 Serial # 1389 Cal Due 9-12-00 Cal Due 2-14-00 Cal Due 6-29-00 Bkg 48-0m Bkg 52-0m Bkg 1.0 c/m Efficiency 25% Efficiency 25% Efficiency 207%	Model <u>BC-4</u> Serial # <u>872</u> Cal Due <u>4-12-00</u> Bkg <u>48 cpm</u> Efficiency <u>25%</u>	Model <u>BC-4</u> Serial # <u>8 3 3</u> Cal Due <u>7-14-00</u> Bkg <u>52 com</u> Efficiency <u>25%</u>	Model Electra Serial # 1389 Cal Due 6-29-00 Bkg 1.0 c/m Efficiency 2077%						
MDA 106.5 dom MDA 110 + dom MDA 94 dom	MDA 106.5 dpm								

Survey Type Contamination 707 Building Survey Area M Location Module A Reconnaisance Level Characterization Purpose

RWP# 00-707-1204

Date 3-2-00 Time 1600

Comments Floor / Walls < 2 meters Unbiased survey points

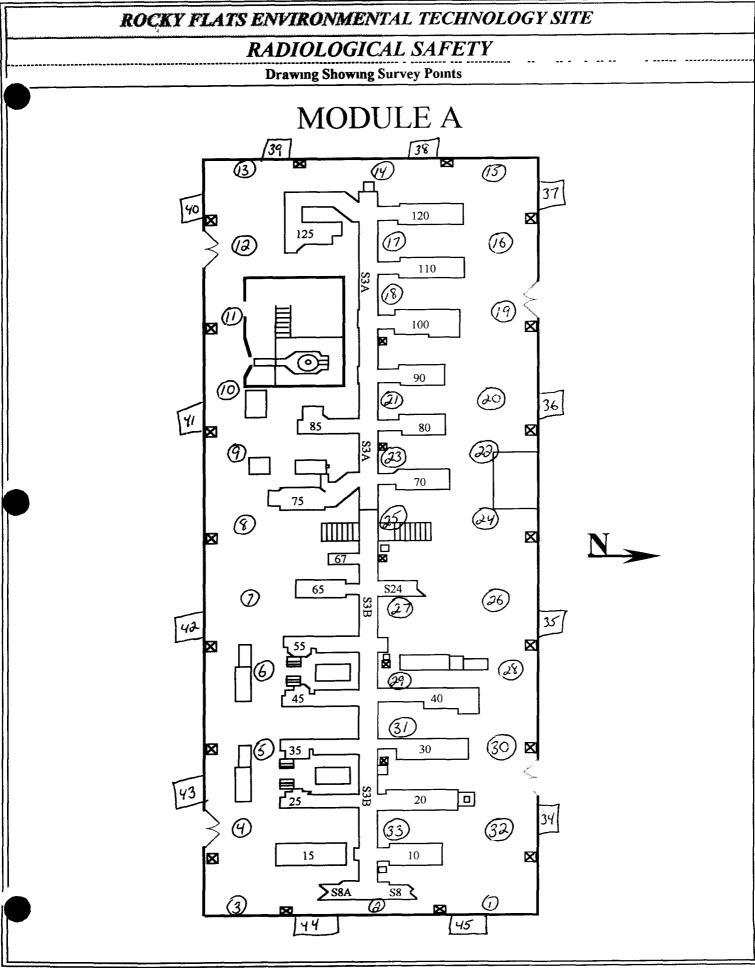
1 m² scans, 1 minute pats and swipes See map for locations
3 b Kajal counts alpha llectra -8 cpm (0,0,1)

SURVEY RESULTS

1									
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	F	3	4	/8	16	F	0	0	138
2	F	0	28	6	17	F	6	76	54
3	F	3	52	18	18	F	3	16	78
4	F	3	44	2,400	19	F	3	20	90
5	F	0	-20	60	20	F	0	28	222
6	F	9	36	24	21	F	9	-12	210
7	F	0	36	168	22	F	O	-4	420
8	F	0	4	42	23	F	O	44	30
9	F	3	12	54	24	F	0	- 8	60
10	F	0	48	72	25	F	0	-32	42
11	F	3	4	288	26	F	6	-48	66
12	F	0	0	/80	27	Under Glove Box by Crit draw	279	-16	3456
13	F	6	-36	48	28	f	0	-16	30
14	F	3	-36	42	29	F	0	-24	3540
5	F	0	8.	444	30	F	3	-72	90

Date Reviewed. 3 ~16.00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE												
RADIOLOGICAL SAFETY												
	Drawing Showing Survey Points be Location\Description Removable Total Swipe Location\Description Removable Total											
#be	Location\Description (Results in DPM/100cm ²)	Rem Alpha		Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha		Total Alpha			
31	F	0	44	30	61							
32	F	0	-4	60	62							
33	F	3	0	246	63							
34	W	0	66	24	64							
35	ω	3	-36	18	65							
36	W	3	-48	12	66							
37	W	3	-52	18	67							
38	W	12	40	1080	68							
39	ω	0	-20	24	69	/						
40	W	42	32	30	70							
41	W	0	-28	18	71				- 1			
42	ω	0	-12	18	72							
13_	W	3	-40	12	73							
	W	3	-20	6	74							
45	W	0	-12	30	75							
46	End of Survey				76	N/A						
47	1		/		77),						
48					75							
49		\square			79							
50					80							
51					81							
52					82							
53	NA				83							
54					84							
55					85							
56					86							
57					87							
					88							
59					89							
60	/				90							



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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

IN	ISTRUMENT DATA	1					
Mfg Eberline	MfgEberline	Mfg NeTech.	Survey Type Contamination				
Model Sac-4	Model Sac-4	Model Electra	Building				
Serial # <u>849</u>	Serial # 837	Serial # 1245	Location Mudule A Survey Area M				
Cal Due <u>4-10-00</u>			Purpose Reconnaisance Level Characterization				
Bkg Oilcam		Bkg OOcom					
Efficiency 33%		Efficiency 22.36%	RWP# 00-707 - 1204				
MDA 115dpm		MDA <u>qu dpm</u>	Date 2-29-00 Time 1500				
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg NE Tech					
Model BC-4	Model BC-4	Model Electro					
Serial # 8 72	Serial # 833						
Cal Due <u>4-12-0</u> 0	Cal Due 7-14 00	Cal Due 6-29-00					
Bkg <u>49 cpm</u>	Bkg 51 cpm	Bkg 10 cpm					
Efficiency 25%	Efficiency 25%	Efficiency 20,71%	Print name // \Signature / Emp #				
MDA 1075 OPm	MDA 109.4 DPm	MDA 94 0Pm					
Comments Floor	/ Walls < 2 meters	Brased survey po	pints				
_1 m ² scans, 1 m	unute pats and swipe	es See map for lo	ocations				
3 bkord cou	nts alpha el	lectra <8cpm	(1,2,3)				

SURVEY RESULTS

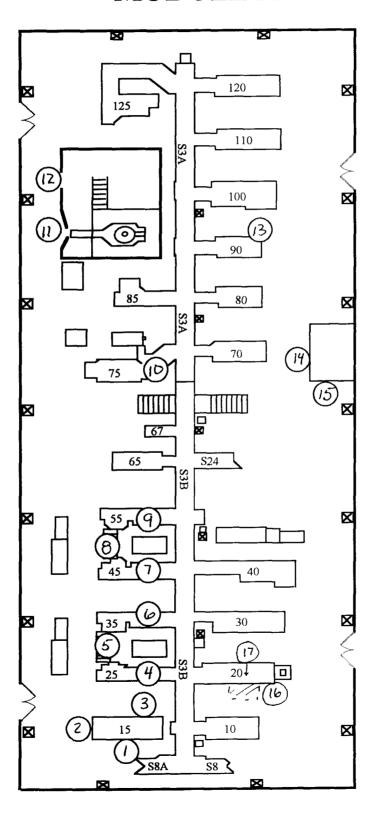
11									
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	F	0	-4	30	16	F	3	0	192
2	F	3	40	18	17	F	0	Ø	30
_3	F	3	36	36	18	END OF SULUEY			
4	F	و	-52	168	19				
5	F	0	-8	54	20				
6	F	0	-20	48	21				
7.	F	3	-32	60	22				
8	F	0	0	48	23				
9	F	0	8	36	24	N'/A			
10	F	0	\mathfrak{A}	102	25				
11	P	3	8	762	26				
12	F	3	-28	49 8	27				
13.	F	0	0	54	28				
14	F	0	-28	12	29				
15.	F	0	-28	30	30				

Date Reviewed: 3 16 00 RS Supervision

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE A





3 cts

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

			the state of the s
IN	ISTRUMENT DATA	A	
Mfg Eberline	Mfg <u>Eberline</u>	Mfg NeTech	Survey Type Contamination
Model Sac-4	Model Sac-4	Model Electra	Building 707
Serial # <u>849</u>	Serial # 837	Serial #_3120	Location Module A Survey Area M
Cal Due <u>4-10-00</u>	Cal Due <u>5-17 o c</u>	Cal Due 4-26-00	Purpose Reconnaisance Level Characterization
Bkg Oizcum	Bkg Cichin	Bkg 3,0 Cpm	
Efficiency 33%	Efficiency 33%	Efficiency 1/09	RWP# <u>CC 707 1204</u>
MDA <u>129 dpin</u>	MDA 11.5 dpin	MDA 94 dpm	Date 3 13/3 12 00 Time Days
Mfg Eberline	Mfg Eberline	Mfg NE Tech	
ModelBC-4	Model_BC-4	Model Electra	The state of the s
Serial #_872	Serial #_833	Serial # 1246	<u> </u>
Cal Due <u>4-12 00</u>	Cal Due 7-14-00	Cal Due 7-24 00	
Bkg 52 cpm	Bkg 51 cpin	Bkg Occ cpm	T
Efficiency 25%	Efficiency 25%	Efficiency 12/74	
MDA 110,4 dpm	MDA 109.4 dpm	MDA 9460 m	
Comments Equip			/og 3

1 minute pats and swipes

See map for locations

SURVEY RESULTS Removable Removable Total Total Swipe Location\Description Swipe Location\Description Alpha Beta (Results in DPM/100cm²) Alpha Alpha (Results in DPM/100cm²) Alpha Pont 16 0 4 -56 408 702 5 GB46 Chit Nai Port -20 17 q32 108 738 Aulent #30 007 Port 12 18 492 CB-70 Port CC14 36 8 4 -44 264 19 150 4.1 Uent #32 TOP SECP -28 672 5-24 Crit Drain છ 102 Butera Decen 3 -12 1812 288 36 1346 Port 41

alpha

BKGD EELPIN alea

(1,1,3)3 12 60

12 0 1038 282 CNUYR SBB /C -12 288 23 3 48 Port co 32 26 28 17310 438

10 6B75 CNVYR 0 L4 282 25 GB25 Entes for 2015 0 24 1314
11 Air Vent #16 3 8 162 26 CB20 C 44 48

-8 294 GB 125 Seam at Port 0040 0 726 CB 10 Port 0011 10 9 12 -32 13 28 Air l'ent #23 300 An Vent #44 174

14. CNVYR 53A (r. t Drain 3 16 102 29 GB 10 Part 0003 C 16 30 15 GB 120 Flange under 0021 33 -32 2232 30 CNV YR 5-8 C. t Drain 60 24 72

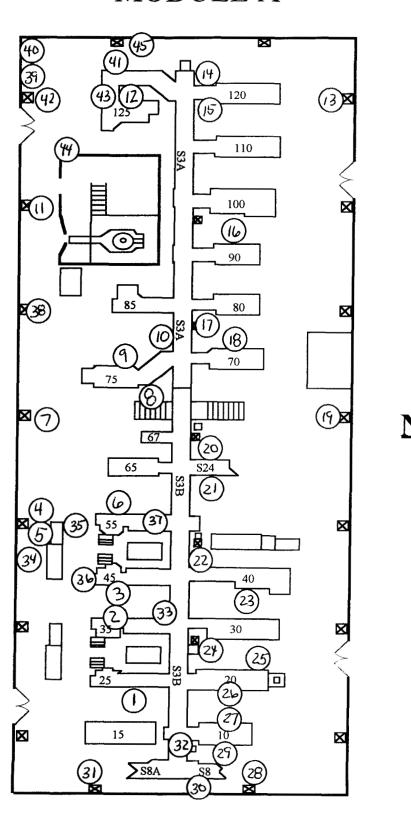
Date Reviewed $3 \cdot (6 - 0)$ RS Supervision

	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE								
	443								
_	4 T					Points	1 6	1.1	I T . 1
pe	Location\Description (Results in DPM/100cm ²)	Alpha	Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha	Beta	Total Alpha
31	Air Vent # 2	3	16	660	61				_/
32	CNVYR S-3B	3	4	18	62				
33	GB 35 POIL OCCZ	9	-8	354	63				/
34	Platform Ladder Top St.p	3_	-8	1626	64			/	/
35	Bot of Control Panal A 250	4	68	462	65			/	
36	Electrical Pipe EndofA45	12	12	1932	66				
	Plat form under GB 55	3	14	2514	67				
38	Air Vent #15	6	16	174	68			/	
39	Bot, of Control Panal A 25	6	_8	876	69		/		
40	Strel Box in coner	12	8	990	70				
f	Rubber Mat under GR A125	3	12	120	71		/		
42	Air Vent #19	36	-40	2814	72	A			
_4 <u>3</u>	Crit Diain GRA125	6	4	0	73				
	3 Step Stocl Rollaround	17.	16	2760	74				
1	Cart	0	12	1320	75				
	End of Survey			-/	76	/			
47				\angle	77	N/H			
48			$-\mathcal{A}$		78				
49					79				
50		\mathcal{A}			80				
51		\angle			81				
_52					82				
53	/A				83				
54					84				
55					85				
56					86				
57					87				
-3	_/			$-\!$	88				
59	/	_			89				
60					90				

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE A



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INSTRUMENT DATA					
Mfg <u>Eberline</u>	Mfg Eberline	Mfg NeTech	Ŀ		
Model Sac-4	Model Sac-4	Model Electra	E		
Serial # <u>849</u>	Serial # <u>837</u>	Serial # 1233	L		
Cal Due 4-10-0	Cal Due <u>5-17-00</u>	Cal Due <u>5-11-0 t</u>	P		
Bkg C14 Cpm	Bkg 0.6 Cpm	Bkg ocepm			
Efficiency_33%	Efficiency 33%	Efficiency, 2063			
MDA 14. Edpm	MDA 14,3 dom	MDA 44 dpm			
'	•	·	l		
Mfg Eberline	Mfg Eberline	Mfg NF Tich	_		
Model BC-4	Model BC-4	Model Election			
Serial # 872	Serial # <u>833</u>	Serial # 1518			
Cal Due <u>4-12-00</u>	Cal Due <u>7-14 00</u>	Cal Due 6 29-00			
Bkg 53 Cpm	Bkg <u>51cpm</u>	Bkg Occom			
Efficiency 25%	Efficiency 25%	Efficiency 2186			
MDA 1/1,3 dp m	MDA <u>169,4</u>	MDA 94dom			

Survey T	ype <u>Contami</u>	nation
Building_		
Location_	Module A	Survey Area 11
Purpose _		Level Characterization

RWP# <u>CC 707 1209</u>

Date 3/3 CC Time Days

Comments Ceiling / Walls > 2 meters Biased survey points

1 minute pats and swipes See map for locations /72.
3 b kgd Counts alpha llutra 28cpm (2,2,3)

SURVEY RESULTS

Swipe	Location\Description		ovable	Total	Swipe	Location\Description		ovable	Total
#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
1	WZZm	3	44	24	16	L ZKm	C	12	42
2	н , ,	0	-8	18	17)/ //	1%	-16	42
3	11 /1	0	28	24	18	11 11	3	-32	24
4	11 11	0	-12	54	19	11 11	(128	18
5	JI II	0	- &	54	20	// //		92	Ł
6	<i>)</i>	le	20	36	21	Ceiling	7	200	18
7	<i>)</i> ;	3	- &	36	22	,,		216	18
8	II II	0	-24	12	23	Į i	<i>c</i>	272	34
9	II II	.3	- &	18	24	<i>11</i>	(432	36
10	ji 11	0	8	12	25	<i>)</i>)	4	192	30
11	11 11	C	28	18	26	17	2	212	4
12	11 11	3	-28	12	27	JI	(12.4	L.
13	// //	0	-32	24	28	11	(144	12
14	<i>[1</i>]!	C	44	36	29)/	5	۶	34
15	// //	0	-4	34	30	11	C	- 8	18

Date Reviewed: 3 16.00 RS Supervisi



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points MODULE** A 10 8 27) 25 7 26 $|\mathcal{U}|$ 120 \boxtimes 125 12 110 (28) 6 100 \boxtimes 13 90 5 85 80 S3A 14 70 75 4 \boxtimes 67 S24 S3B 3 40 16 (22 2 (30) 30 × 17 S3B 20 (21) 55C 15 10 i ∑S8A S8 2 19 18 20

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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002		Building 707			
Survey Area · N		Survey Unit N/A			
Initiator/ Date	Release Date	Validation Date	Closure Date		
10/25/48	9/ 1/2/99	ROM 6/14/00	EDM 6/14/60		
/			+		

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002 Building 707		Type 3					
Survey Area N		Survey Unit N/A	.	Area (m ²) 634			
		OF MODULE B (ROMINATION AREAS		NG 707 RADIOLO	OGICAL AREAS		
Survey Type			Classification				
RLC Survey X	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
45	44	45	4	0	59		
Building		Туре		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Description							
Survey Type			Classification				
RLC Survey 🗆	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
				,	ĺ		
Building		Туре		Survey Area			
Survey Unit			Area (m²)		1		
Survey Unit Description							
Survey Type			Classification				
RLC Survey □	FSS 🗆		Class 1 Class	2 □ Class 3 □ U	Jnknown 🗆		
Random/Uniform Surface Activity Measurements	Biased Surface Activity	Equipment Surface Activity	Media Samples	Volumetric	Surface Activity Scans		
	Measurements	Measurements		Samples			
	Measurements	Measurements		Samples			
Building	Measurements	Measurements Type		Survey Area			
	Measurements		Area (m²)	•			
Building			Area (m²)	•			
Building Survey Unit.			Area (m²) Classification	•			
Building Survey Unit. Survey Unit Desc			Classification Class 1	Survey Area 2 □ Class 3 □ U	Jnknown □		
Building Survey Unit. Survey Unit Desc	cription		Classification	Survey Area			

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002 Building: 707					
Survey Area: N	Survey Unit: N/A				
Survey Unit Description: INSIDE OF MODULE B (ROOM 105) INSIDE OF MODULE B (ROOM 105) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS					
Building Information:					
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey □				
Building Type Type 1 🗆 Type 2 🗖 Type 3 X					
Classification Class 1 Class 2 Class 3 Un					
Contaminants of Concern Plutonium X Uranium X	Other 🛘				
Justification for Classification: N/A					
Special Support Requirements: Ladder, manla instrumentation may be required for access into	- · · · · · · · · · · · · · · · · · · ·				
Special Safety Precautions: Access to overhead Review RWP requirements and surveys prior to overheads	· ·				
Isolation Controls:					
Level 1 🗆 Level 2 🗆 N/A X					
Labeling Requirements: NONE					
Survey Package Implementation:					
	7 M 111				
	-				

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707		
Survey Area: N		Survey Unit. N/A		
	ription: INSIDE OF MODULE B AREAS ARE POSTED AS FIXE			
	Minimum Survey/Sampling N	Measurement Requirements		
Measurement	Number and Type	Comments		
Surface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1		
Measurements	45 <u>unbiased</u> survey points uniformly distribution	SEE NOTE 2		
	14 <u>biased</u> survey points at the following locations	SEE NOTE 3 SEE NOTE 4		
	- 10 points around floors adjacent to contained contamination areas (whaccessible)			
	- 2 points near criticality drain locat	ions		
	- 2 points near entrance to temporary near SE corner of room	y room		
	CEILINGS/WALLS > 2 meters			
	30 <u>biased</u> surveys (divided evenly betwood ceiling when possible) with focus of following areas			
	- Walls behind process lines			
	- Ceilings above GB's			
	- Ceilings/walls adjacent to c-cells/t	ents		
	- Stained or discolored areas			
	- Walls/ceilings near GB's mounted walls	high on		
	- Areas around pipe or other penetra	tions		
	EQUIPMENT			
	45 <u>biased</u> survey points on equipment v or more samples from	with one		
	- Each GB "section" extending from (center) GB lines	the main		
	Gloveboxes which have visible lead contained spills beneath them	ks or		
	- 2 surveys points at each of 5 room ducts	exhaust		
	- Bag-in/bag out ports to GB lines			
	- 5 survey points on top of overhead (where locations are accessible thr reach tools)			



SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-00	002 B	Building: 707			
Survey Area: N	S	Survey Unit. N/A			
	ription: INSIDE OF MODULE B (AREAS ARE POSTED AS FIXED				
Minimum Survey/Sampling Measurement Requirements					
Measurement	Number and Type	Comments			
Surface Scanning	FLOORS/WALLS < 2 meters	SEE NOTE 1			
	59 1 m ² surface scans shall be taken at ear location identified for surface activity	SEE NOTE 2			
measurements Locations found above	measurements Locations found above th	e SEE NOTE 3			
	DCGL shall be documented	SEE NOTE 4			
	CEILINGS/WALLS > 2 meters				
	NONE				
	EQUIPMENT				
	NONE				
Media Samples	Total of 4 biased (paint) media samples to follows	see NOTE 5			
	- 1 sample near one of the entrances to	the			
	module				
	- 1 sample around a posted HCA - 1 sample beneath GB 20				
	- 1 sample near a criticality drain				
Volumetric	NONE				
Samples					
Isotopic Gamma	NONE				
Scans					

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PAGE 6 OF 9 PAGE (
SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS/FORM (cont)

Package ID: 99-0002	Building 707			
Survex Area: N	Survey Unit N/A			
Survey Unit Description: INSIDE OF MODULE B (ROOM 105) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS				
Survey/Sempl	ing Instructions			

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For each media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-24\, U-234, U-235, and U-
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165\RSP-07 02, Contamination Monitoring Requirements

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: N	Survey Unit N/A

Survey Unit Description: INSIDE OF MODULE B (ROOM 105) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4. Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

Fa superce let 01/18/00 M Chg # 3 SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (dont)

Packag	(D: 99-0002	Building 707
Survey	Area: N	Survey Unit N/A
Survey RADIO	Unit Description · INSIDE OF MODULE : LOGICAL AREAS ARE POSTED AS FIX	B (ROOM 105) BUILDING 707 ED CONTAMINATION AREAS
		_

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Dess than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: N	Survey Unit N/A

Survey Unit Description: INSIDE OF MODULE B (ROOM 105) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected.
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4- Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0	002	Building 707		
urvey Area: N		Survey Unit N/A	1	
Change #	Description		Initiator/ Date	PRE
1	Added page GA		(2) 12/2/99	ME
2 1	Eleted Ref to diperty.	SCAN B' MEAS.	Con 12/21/17	ABE.
2 R	ed pa to eliainate sour	. Both to so me	Da or/12/00	HOE
3	Toplaced as GA m/a	existed as	m 21/2/00	ABE
4 12	Eloled Rel to divecty. Leplaced py GA w/A EPLACED DE 9 WITH PRE	s 9 THROUGH 9 J	dr 4/27/00	Edy
			100 1/1	
		· · · · · · · · · · · · · · · · · · ·		
			 	
			-	
	·····			

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Bu	ıldıng 707	
Survey Area: N	rvey Unit N/A		
Survey Type: Reconnaissance Level Characterization	Surve	ey X Final Status Surv	еу 🗆
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys		S	S
Total Activity Surveys		J	b
Exposure Rate Surveys		NA	NA
Removable Surveys		S	do-
Media Samples		ŒS	Konj
Volumetric Samples		NA	NA
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys		1	A-
Total Activity Surveys		1	\$
Exposure Rate Surveys		NA	NA
Removable Surveys		1	A
Media Samples	• •	ael	DOM
Volumetric Samples		NA	NA
Comments			- I A A A A A A A A A A A A A A A A A A



Rev 9/99

			Resident	DNII ALL III	CEINDILC)	(ar Stitle)	
\ I	NSTRUMENT :	DATA					
Mfg	Mfg			Survey Ty	oe:		
Model	Model			Building:			
Serial #	Serial #		#				
Cal Due	Cal Due	Cal Du	ie				
Bkg	Bkg.			*			
Efficiency	Efficiency	Efficie	nev	- RWP#			
MDA	MDA	MDA _					
				Date		Time	
Mfg	Mfg	Mfg					
Model	Model			RCT		/	/
Serial #	Serial #		#		rint name	Signatu	re Emp #
Cal Due	Cal Due		le	-]		-	•
Bkg	Bkg			RCT		<i>I</i>	/
Bfficiency		Efficie	ncy	P	rınt name	Signatu	re Emp#
MDA		MAQA_				_	-
PRL#:Comments			SURVEYA	PESHITS			
[POWATI	REMOVABLE			
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	Beta DPM/100 cm²	Alpha DPM/100 cm²	Beta DPM/100 cm²	Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	Beta DPM/100 cm²	Alpha DPM/100 cm²	Beta DPM/100 cm²
23 24				48 49			
25		-		50			
Date Reviewed:	R	S Supervision		rınt Name		Signature	/ Emp. #

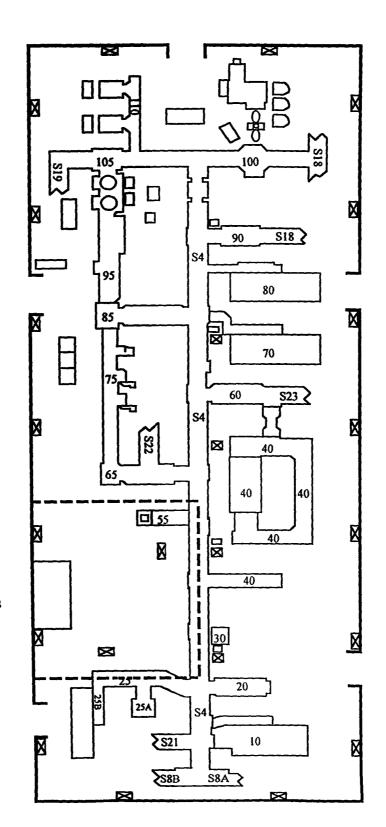
The sail

RAD(O)OGICAL SAFETY

Drawing Showing Survey Points

MODULE B

WANTENITANE, THE CHANCOL OLD Y STATE



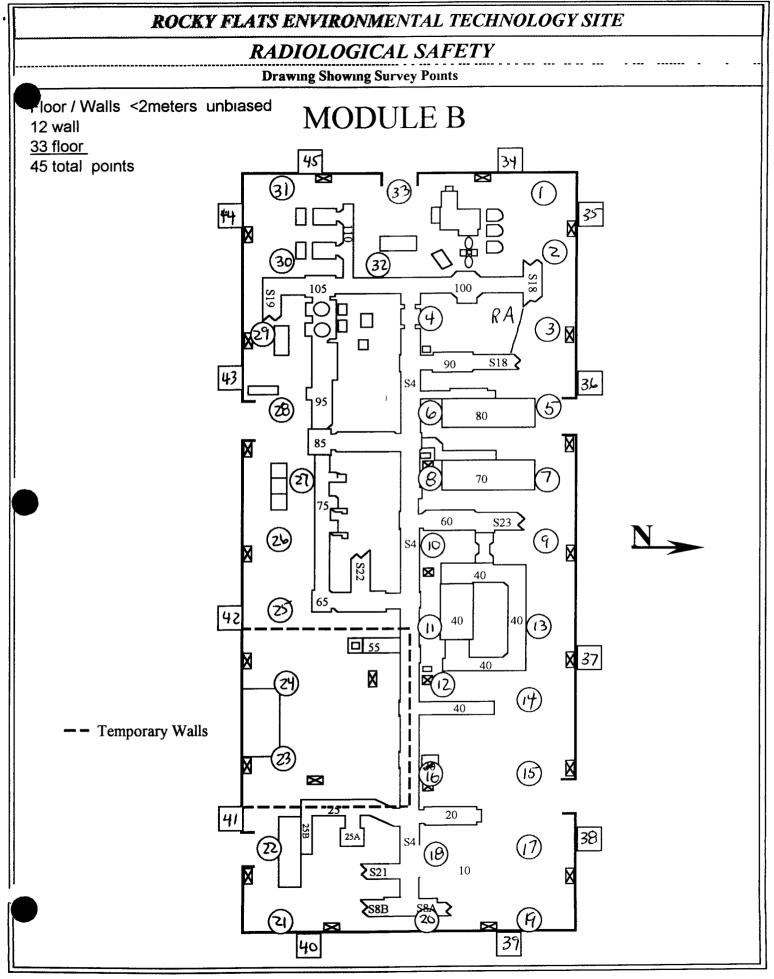
— Temporary Walls

" A said was the

307 Rev 05/98

	ROCKY FLATS ENVERONMENTAL TECHNOLOGY SITE											
INSTRUMENT DATA Mfg. Eberline Mfg. NeTech Survey Type Contamination												
Mfg			Afg NeT			cy rype	n					
			Model Elec			ing						
			enal #_ <i>13</i> Cal Due _7:			non <i>Module, B</i> ose Reconnaisance Level		ey Are. terizati				
			lkg <u>50</u>			,,,,,			<u> </u>			
			fficiency 4		RW	P# <u>00-707-120</u>	7					
MDA	11.5dpm MDA	139 DPM N	IDA _ 94	DPM	1	2-29 00 Time	1600)				
Mfg	Eberline Mfg	Eberline N	Afg 📐									
			1odel									
	al # <u>872</u> Senal Due <u>4-12-00</u> Cal D		erial #	Na -								
			kg	7(,								
		•	fficiency_	$\overline{\perp}$								
	4 107.5 DPm MDA	109,40Pm N	IDA									
1	ments Floor / Wall		Inbiased									
1 1	m ² scans, 1 minute p	ats and swipes	See ma	p for lo	ocation	ns .						
#	-4 smears on	ly (Bk6 3	3.1 5	min.)	3	other brand counts alpha	electro	a < 8Cpm	1(2,2,3)			
	SURVEY RESULTS											
Swipe	Location\Description	Re	movable	Total	Swipe	Location\Description	Rem	ovable	Total			
#	(Results in DPM/100cm ²)) Alph	a Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha			
1	F	0	-4	\	16	F	0	8	24			
2	E	0	12	N/a	17	F	0	-32	24			
3	F	0	-40		18	E	0	24	18			
4	F	0	-20	\	19	F	0	20	6			
5	F	0	36	18	20	F	0	16	30			
6	F	0	12	60	21	F	0	16	30			
7	F	0	12	12	22	F	0	-36	24			
8	F	9	0	48	23	F	0	36	204			
9	F	3	-4	48	24	F	0	4	36			
10	F	9	-32	0	25	P	6	-12	6			
11	F	0	-28	6	26	F	0	40	24			
12	F	0	16	30	27	F	0	36	-6			
13	F	3	36	30	28	F	0	-40	12			
14	F	0	4	18	29	F	0	-4	18			
5	F	3	-56	-/8	30	F	0	12	-12			
	Reviewed 3-24.	OO RS Superv	ision.		nt Ivan	o Signature		Emp "	-			

	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE											
	RADIOLOGICAL SAFETY											
)	Drawing Showing Survey Points Removable Total Syupe Location Description Removable Total											
pe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	vable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha Bo					
31	È	0	-4	la	61			/_				
32	F	0	16	96	62			_/_				
33	F	6	-4	48	63			4				
34	WKZ	0	40	18	64							
35	W < Z	0	-16	18	65		/					
36	W < Z	0	52	6	66							
37	W < Z	0	-8	6	67		<u> </u>					
38	W < Z	0	-4	12	68		_/_					
39	W < Z	0	24	12	69		/- -					
40.	W < Z	0	24	18	70							
41	W < 2	3	28	18	71	/						
42	W < 2	3	-4	6	72		`					
3.	W < Z	3	16	6	73							
4	W Z Z	3	0	-6	74							
45	W < Z	6	-4	12	75							
46	END OF SURVEY				76	V/A						
47				_	77	/						
48					75							
49					79							
50					80							
51	/				81	/						
52					82							
53	NA				83							
54					84							
55			_		85							
56					86							
57					87							
					88							
59					89	/						
60.	/				90							



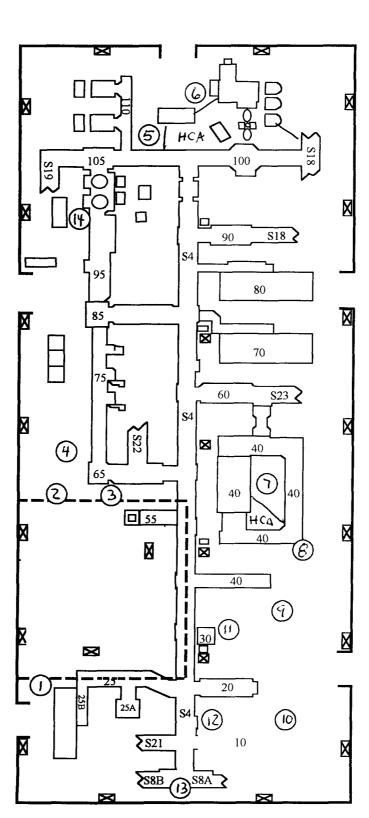
310

	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE											
	INSTRUMENT DATA 'Mfg Fherline Mfg Fherline Mfg NeTech Survey Type Contamination											
_	Eberline	Mfg Eberline		fg <u>Ne</u>			vey Type	Contam	iinatioi	<u>n</u>		
		odel Ele			ling <u>707</u>	, 0						
	al # <u>849</u>							duie B	T1/		ey Are	
	Due <u>4-10-00</u>					Purp	ose Rec	onnaisance	Level	<u>_narac</u>	terizat	ion
	07 cpm	Bkg 03 spm	Bk	g <u>∝ 3</u>	O cpm	DW	D# ΩC	0-707-	1204			
	nency 33%	Efficiency 33%		ficiency		6	1 # <u>- OQ</u>		10.0			
1	A 16,9 dpm	MDA 139 dpr		DA <u>94</u> \	dpm	Dat	e <u>3-/-</u>	00	Time _	160	<u> </u>	
	<u>Eberline</u>	Mfg Eberline		g 📐								
	del <u>BC-4</u>	Model BC-4		odel								
	al # 872			rial #	Va -							
		Cal Due <u>7-14-0</u> Bkg <u>5/40</u>			/\(\)							
		Efficiency 25%		iciency	$\overline{}$, -				
•		MDA 109 4 dpm			-		Print na	ame /	Signatur	:e	/ Emp) #
		/ Walls < 2 mete			rvey po	oints						
_11	m ² scans, 1 m	inute pats and sw	ıpes	See ma	ap for l	ocatio	ns					
_3	blad count	s alpha ele	ta	~8cpn	1001	,1)						
ļ. <u> —</u>	•	· · · · · · · · · · · · · · · · · · ·				, 						
	SURVEY RESULTS											
Swipe #	Location\Desc (Results in DPM		Ren Alpha	novable Beta	Total Alpha	Swipe #	Location\\((Results in F	Description DPM/100cm ²)		Remo	ovable Beta	Total Alpha
1	F/00r		0	4	138	16	(TOBALIS III I	<u> </u>				7
2	Floor		0	32	54	17				-		
3	F/001		0	8	12	18						
4	Floor		6	-28	6	19		····				
5			0	44	12		<u> </u>					
			3			20			-			
6 7	Floor			36	72 174	21		Λ/	A			
	F/00r		0			22			//			
8	Floor		<u> </u>	-32	6	23						
9	Floor		0_	104	0	24				<u> </u>		
10	Floor		3	-20	/38	25		/		-		
11	Floor		0	24	12	26		/ 				
12	Floor		0	24	24	27						
13	Floor C	rit D	0	24	6	28						
14	Floor Cr	·,+ D	3_	-8	72	29						
5	ENd	of Survey				30	<u>/</u>					
Date	Reviewed: 3	24.00 RS Su	perv									
					111	iit Naii	ie	Signatu	i e		Emp	#

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE B





— Temporary Walls

INSTRUMENT DATA										
Mfg Eberline	Mfg Eberline	Mfg NeTech								
Model Sac-4	Model Sac-4	Model Electra								
Serial # 849	Serial # 837	Serial # 1245								
Cal Due <u>4-10 00</u>	Cal Due <u>5-17-00</u>	Cal Due 2-3-00								
Bkg O5 com	Bkg 0.1 .pn	Bkg & 30 cpm								
Efficiency 33%	Efficiency 33%	Efficiency 22 36%								
MDA 15,6 4pm	MDA 115 dpm	MDA <u>94 dpm</u>								
Mfg Eberline	Mfg Eberline	Mfg \								
Model BC-4	Model_BC-4	Model								
Serial # 87.2	Serial # <u>833</u>	Serial #								
Cal Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>	Cal Due//#								
Bkg 48 400	Bkg 52 6m	Bkg								
Efficiency 25%	Efficiency 25%	Efficiency								
MDA 1065 dpm	MDA 110.7 dpm	MDA								

Survey Type	Contamination
Building 707	
Location //200	
Purpose Reco	nnaisance Level Characterization
RWP#O	5-707-1204
Date <u>3-2</u>	00 Time /600

Comments Equipment Biased survey points

1 minute pats and swipes See map for locations
3 bkgd courts alpha electra & 8cpm

SURVEY RESULTS

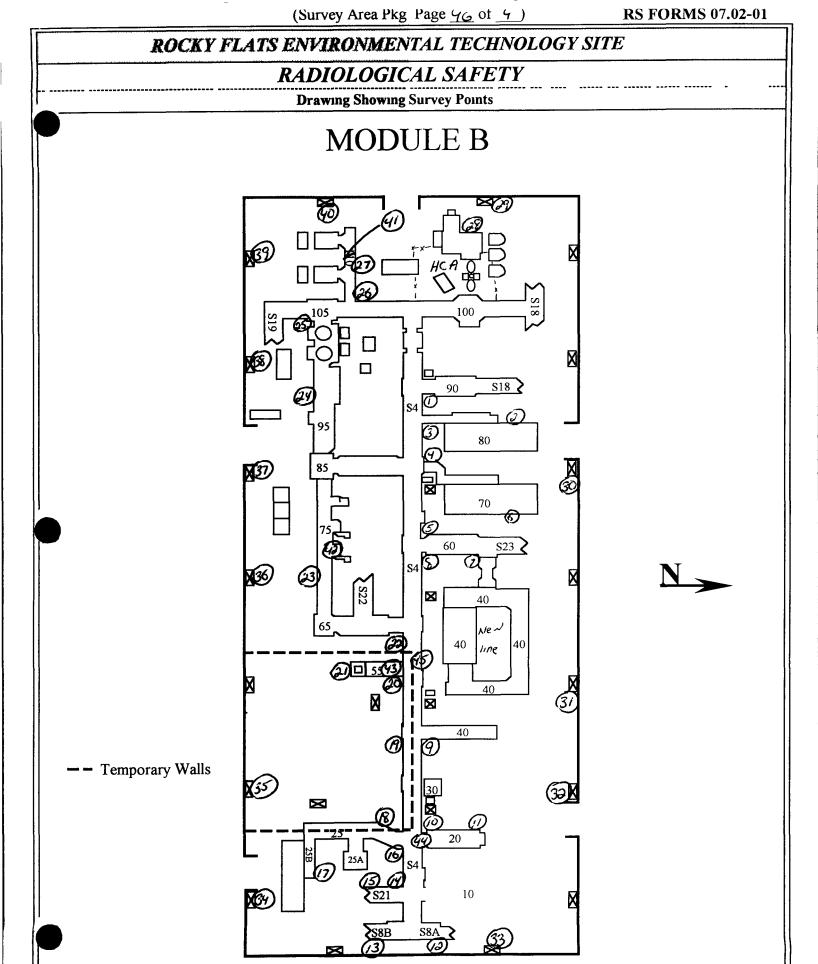
		,		7					
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	G <i>B</i>	0	8	78	16	GB	6	-32	36
_2	GB	9	-48	300	17	WNdow (026)	0	-20	3534
_3	G <i>B</i>	0	8	42	18	6 <i>B</i>	0	-28	18
4	GB	3	-12	24	19	<i>3.</i> 0 (∞77)	6	20	36
_5	G <i>B</i>	0	-12	12	20	G <i>8</i>	0	-44	30
6	G <i>B</i>	3	-36	13,800	21	Airlock	3	-8	42. K
7	6 <i>8</i>	0	-40	18	22	GB	3	-28	48
8	GB (Bottom Gasket)	6	8	247.2 K	23	BO (0007)	0	28	66
9	6B	0	44	12	24	G8	24	-56	36
10	6 <i>B</i>	0	-56	4296	25	<i>GB</i>	0	24	48
11	68	3	72	306	26	G <i>B</i>	0	4	42
12	GB	0	-52	12	27	B.O. (0012)	0	24	36
13	68	0	8	6	28	Pump	0	-36	/8
14	GB	0	-4	24	29	Exhaust	0	-20	714
15	B O. (0015	0	-16	30	30	Exhaust	36	-8	408

Date Reviewed: 3-2400 RS Supervision:

RADIOLOGICAL SAFETY

Drawing Showing S	Survey Pon	nts
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Drawing Showing Survey Points									
Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	vable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	Peta Beta	Total Alpha
31	Exhaust	0	0	/86	61				
32	Exhaust	0	-12	90	62			/	<u>/</u>
- 11	Exhaust	0	0	198	63			_/	
11	Exhaust	0	-36	156	64			/	
11	Exhaust	3_	-4	180	65			/	
- 11	Exhaust	0	4	216	66				
H	Exhaust	3	4	1806.	67				
11	Exhaust	0	12	552	68				
11	Exhaust	0	76	1026	69		/		
- 11	Exhaust	0	-4	228	70		1		
i i		0	56	132	71				
42.	Expanst Duct-Piping Elhaust Duct-Piping	3	16	324	72				
43	Exhaust Duct-piping	12	- /6	120	73				
44	Exhaust Duct-piping	0	-52	126	74				
45	Exhaust Ouct-paping	0	-20	90	75	1/4			
46	END OF Survey				76_	70/71			
47	/				77				
48					75				
49.		-			79				
50.					80				
51.					81			<u> </u>	
52	NA				82				
53					83				
54					84				
55					85				
56					86				
<u>57.</u>					87				
58.					88				
59.					89				
60.					90	/			



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Survey Type Building 707

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA					
Mfg Eberline	Mfg Eberline	Mfg NeTech			
Model Sac-4	Model Sac-4	Model Electra			
Serial # 849	Serial #_ 837	Serial #_1345			
Cal Due <u>4-10-00</u>	Cal Due 5-17-00	Cal Due <u>7-3-00</u>			
Bkg <u>0.7 cpm</u>	Bkg o3 cpm	Bkg & 3.0 com			
Efficiency 33%	Efficiency 33%	Efficiency 22 36%			
MDA 169 dpm	MDA 139 dpm	MDA 94 dpm			
•		•			
Mfg Eberline	Mfg Eberline	Mfg \			
Model BC-4	Model BC-4	Model			
Serial # 872	Serial # 833	Serial #			
Cal Due 4-12-00	Cal Due <u>7-14-00</u>	Cal DueXA			
Bkg <u>48 ym</u>	Bkg <u>5/ 4pm</u>	Bkg /			
Efficiency 25%	Efficiency 25%	Efficiency			
MDA 1065 dan	MDA 109 4 dpm	MDA			
Comments Ceiling / Walls > 2 meters Biased survey					

Location Mock & Survey Area M Purpose Reconnaisance Level Characterization	Dunuing_			
Purpose Reconnaisance Level Characterization	Location	Modele	β	Survey Area M
	Purpose _	Reconnaisa	nce Level	Characterization
RWP# 00 707-1204	RWP#	00 707	7-1204	(
Date 3-7-00 Time 7600	n . 2	7 - / ((()	T	11.00

Contamination

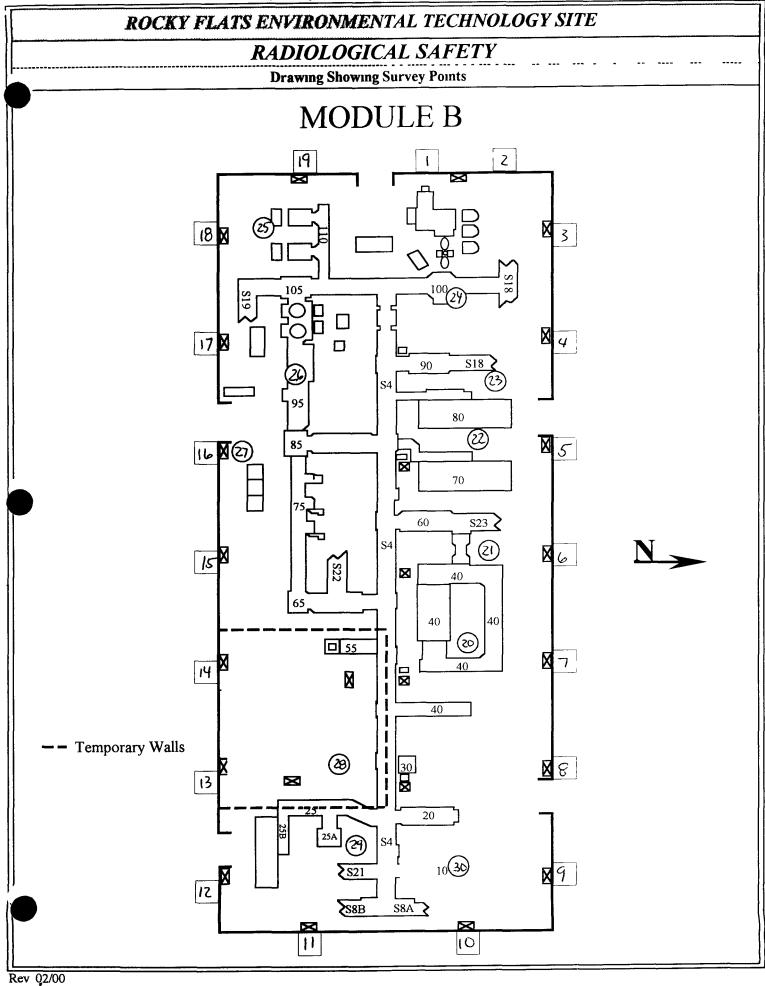
See map for locations 1 minute pats and swipes

SURVEY RESULTS

Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1.	wall > 2	0	-4	6	16	11	0	-8	24
2	Į l	6	-40	18	17	П	0	20	6
3.	[1	0	12	6	18	11	0	36	24
4	h	3	-28	12	19	11	0	44	6
5	(1	0	52	30	20				
6	(3	32	12	21				
7.	1 4	0	28	6	22				
8	11	3	24	-6	23				
9	(1	3	-12	6	24				
10.	11	3	-56	/8	25	NA			
11	11	O	36	0	26				
12	11	0	12	24	27				
13.	11	0	24	12	28				
14.	11	0	-32	-6	29				
15	(1	0	8	24	30				

Date Reviewed: 39400 RS Supervision:

		ROCKY FLA	TS E	NVIR	ONM	ENT 2	AL TECH	INOLOG	<i>FY SITE</i>	;		
	IN	STRUMENT DAT						~4am	-4	<u> </u>		
	Eberline	Mfg Eberline	-	g NeT			vey Type	Contan	nınation			
	el <u>Sac-4</u> ıl#849	Model Sac-4 Serial # 837	_	nal #1			ling <u>707</u> tion <u>B</u> -	mob		Surve	y Area	N
	Due 4-10-00	Cal Due <u>5-17-00</u>		l Due <u>5-</u>		1		nnaisanc	e Level C			
Bkg	O S cpm	Bkg OO cpm	Bkg	g <u>30</u>	CPn			707	1206	1		
	nency 33%	Efficiency 33%	Effi	iciency 2	<u>30.63%</u>	KW.	P#	~ ///	_ ,	<u>r</u>		
	15.6 DPM	MDA 8 2 0Pm		DA <u>94</u>	DPM	Date	3-2	3-00	Time	090	<u>)O</u>	
_	Eberline PC 4	Mfg Eberline		g								
	lel <u>BC-4</u> al #_872	Model BC-4 Serial # 833	-	ndel nal #	1/2							
	Due <u>4-12-00</u>	Cal Due 7-14-08	•	Due	/ /							
Bkg	54 apm	Bkg 53 cpm	Bkg	g <u> </u>		RCT						
	ciency 25%			iciency_			Print na	ime /	Signatur	e	/ Emp	# د
		$\frac{\text{MDA 111.3 DPm}}{\text{pg / Walls > 2 meter}}$			Ver	Tointe						
		ng / Walls > 2 metended nd swipes See n				<u> 20mrs</u>						
	minute pare	In swipes and	lap IUI	1000	<u>/115</u>		-					
					RVEY	RESUI	<u>LTS</u>					
Swipe #	Location\Desci (Results in DPM/	ription /100cm ²)	Reme Alpha	ovable Beta	Total Alpha	Swipe #	Location\D (Results in DI	Description PM/100cm ²)		Remo Alpha	ovable Beta	Total Alpha
)	C > 2		3	36	6							
21	C > Z		0	28	0							
22	C > Z		3	40	12							
23	C > 2		0	44	30							
24	C > 2		3	4	36							
25	() 2		٥	-40						/		
26	C > Z		3	48	36						1	
27	C > 2		0	-4	36			/	VA			
28	C > Z		6	60	42				/			
29	C > Z		0	-4	30							
30	C > 2		0	12	54							
		of survey										
	NA	¥										
Date:	Reviewed	RS Su	ıpervisi	ion _		ınt Nam	/	Signatu			Emp #	



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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002		Building 707					
Survey Area O		Survey Unit N/A					
Initiator/ Date	Release Date	Validation Date	Closure Date				
A 10/25/49	9) 12/21/99	100my 6/14/00	Dony 6/14/00				

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246/446

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	0002	Building 707		Type 3			
Survey Area O		Survey Unit N/A	A Area (m ²) 634				
			OOM 110) AND C-CONTAMINATION		07		
Survey Type			Classification				
RLC Survey X	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
58	54	45) 4 	0	72		
Building		Туре		Survey Area			
Survey Unit			Area (m²)	<u> </u>			
Survey Unit Description							
Survey Type			Classification				
RLC Survey □	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown 🗆		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
<u> </u>							
Building		Туре	Survey Area				
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type			Classification				
RLC Survey □	FSS 🗆		Class 1 Class	2 □ Class 3 □ U			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре	Survey Area				
Survey Unit			Area (m²)				
Survey Unit Description							
Survey Type			Classification				
RLC Survey □ FSS □			Class 1 Class	2 □ Class 3 □ U	Jnknown 🗆		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
				Ī			

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building. 707			
Survey Area: O	Survey Unit. N/A			
Survey Unit Description: INSIDE OF MODULE C (ROOM 110) RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS				
Building Information:				
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey 🗆			
Building Type Type 1 Type 2 Type 3 X				
Classification Class 1 □ Class 2 □ Class 3 □ Un	known X			
Contaminants of Concern Plutonium X Uranium X	Other			
Justification for Classification: N/A				
Special Support Requirements: Ladder, manli instrumentation may be required for access into				
Special Safety Precautions: Access to overhead Review RWP requirements and surveys prior to overheads				
Isolation Controls:				
Level 1 □ Level 2 □ N/A X				
Labeling Requirements: NONE				
Survey Package Implementation:				
) Ma			

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building: 707			
Survey Area: O	S	Survey Unit· N/A			
Survey Unit Description: INSIDE OF MODULE C (ROOM RADIOLOGICAL AREAS ARE POSTED AS FIXED CON					
	Mınımum Survey/Sampling M	easurement Requirements			
Measurement	Number and Type	Comments			
Surface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1			
Measurements	45 <u>unbiased</u> survey points uniformly distribute throughout room 110	SEE NOTE 2			
	13 <u>unbiased</u> survey points uniformly distribute throughout "c-pit" (2 per wall, 5 on floor)	d SEE NOTE 3 SEE NOTE 4			
	14 biased survey points at the following location				
	- 5 points around floors adjacent to contain contamination areas (where accessible)				
	- 2 points near criticality drain locations				
	- 3 points in area where equipment was strout (NW area of room)	ipped			
	- 4 points beneath (large and small) tanks i	n C-Pıt			
	CEILINGS/WALLS > 2 meters				
	30 biased surveys (divided evenly between wa ceiling when possible) with focus on following room 110				
	- Walls behind process lines				
	- Ceilings above GB's				
	- Ceilings/walls adjacent to c-cells/tents				
	- Stained or discolored areas				
	- Walls/ceilings near GB's mounted high o	on walls			
	- Areas around pipe penetrations or any oth penetrations	her			
	10 biased surveys (5 wall, 5 ceiling) in "C-Pit" determined by RCT	as			
	EQUIPMENT				
	45 biased survey points on equipment with one samples from	e or more			
	- Each GB "section" extending from the m (center) GB lines	ain			
 Gloveboxes which have visible le contained spills beneath them 2 surveys points at each of 5 roor 					
		ist ducts			
	- Bag-ın/bag out ports to GB lines				
	- 5 survey points on top of overhead pipin locations are accessible through reach too				
	1				

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-00	002	Building 707				
Survey Area: O		Survey Unit N/A				
		C (ROOM 110) AND C-PIT BUILDING 707 XED CONTAMINATION AREAS				
	Mınımum Survey/Sampling l	Measuren	nent Requirements			
Measurement	Number and Type		Comments			
Surface Scanning	FLOORS/WALLS < 2 meters 72 1 m ² surface scans shall be taken at location identified for surface activity measurements. Locations found to be a DCGL shall be documented. CEILINGS/WALLS > 2 meters. NONE EQUIPMENT. NONE		SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4			
Media Samples	Total of 4 biased (paint) media samples follows - 1 sample near one of the entrances module - 1 sample around a posted HCA - 1 sample beneath a GB - 1 sample near a criticality drain		SEE NOTE 5			
Volumetric Samples	NONE					
Isotopic Gamma Scans	NONE					

RSFORMS-16.01-8

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (dont)

Packag	(ID· 99-0002	Building 707				
Survey	Area· O	Survey Unit N/A				
Survey Unit Description: INSIDE OF MODULE C (ROOM 110) AND C-PIT BUILDING 707						
RADIO	RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS					

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall documen the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample.
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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Package ID: 99-0002	Building 707
Survey Area. O	Survey Unit: N/A

Survey Unit Description: INSIDE OF MODULE C (ROOM 110) AND C-PIT BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

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- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements



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Package ID: 99-0002	Building 707
Survey Area · O	Survey Unit N/A
0 11 15	DIGIDE OF LODIN F.C. (DOOL (110) AND C. DIT BUILDING TOT

Survey Unit Description: INSIDE OF MODULE C (ROOM 110) AND C-PIT BUILDING 707 RADIOLOGICAL ARBAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radion progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building 707
Survey Area· O	Survey Unit N/A

Survey Unit Description: INSIDE OF MODULE C (ROOM 110) AND C-PIT BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos.
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
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- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
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 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID 99-0002		Building 707						
Survey Area. ()	Survey Unit N/A						
Change #	Description		Initiator/ Date	PRE				
1	Added page GA		9/ 12/2/49	MAS				
		SCAN IS MEAS	9/12/2/19	Ne g	0//			
2	Repl. pg 6 to dim. Ret.	to specific & man	(A) 0/17/00	Mag				
8	ceplaced of 6A w/ no	red a	9701/18/00	MIZ				
4	pages of data pages 9.4 hough	9Kinsky/completed	1/20 4/2/00	d d				

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SURVEY PACKAGE VALIDATION CHECKLIST FORM

All Documentation Reviewed for Completion Super Scan Surveys Total Activity Surveys Exposure Rate Surveys JA Removable Surveys Media Samples Volumetric Samples All Surveys and Samples Accounted For	Final Status Survey RCT PRE Supervisor J J J NA NA NA NA RCT PRE Supervisor J J NA NA NA NA RCT PRE Supervisor J J NA NA NA NA RCT PRE
All Documentation Reviewed for Completion Super Scan Surveys Total Activity Surveys Exposure Rate Surveys Media Samples Volumetric Samples Volumetric Samples All Surveys and Samples Accounted For Scan Surveys Total Activity Surveys Exposure Rate Surveys A Exposure Rate Surveys	RCT PRE Supervisor
Super Scan Surveys Total Activity Surveys Exposure Rate Surveys Media Samples Volumetric Samples Volumetric Samples All Surveys and Samples Accounted For Scan Surveys Total Activity Surveys A Exposure Rate Surveys A Exposure Rate Surveys	Supervisor
Total Activity Surveys Exposure Rate Surveys AREmovable Surveys Media Samples Volumetric Samples Volumetric Samples All Surveys and Samples Accounted For Scan Surveys Total Activity Surveys Exposure Rate Surveys A	J J- SSS EDM NA NA RCT PRE
Exposure Rate Surveys Ala Removable Surveys Media Samples Volumetric Samples All Surveys and Samples Accounted For Scan Surveys Total Activity Surveys Exposure Rate Surveys Ala Ala Surveys Ala Surveys Ala Ala Surveys Ala Ala Surveys Ala Ala Surveys Ala Ala Surveys Ala Ala Surveys Ala Ala Surveys Ala Ala Surveys Ala Ala Surveys Ala Ala Surveys Ala Ala Surveys Ala Ala Surveys Ala Ala Surveys Ala Ala Surveys Ala Ala Surveys Ala Ala Surveys Al	J J- SSS EDM NA NA RCT PRE
Removable Surveys Media Samples Volumetric Samples All Surveys and Samples Accounted For Super Scan Surveys Total Activity Surveys Exposure Rate Surveys	J J- SSS EDM NA NA RCT PRE
Media Samples Volumetric Samples NA All Surveys and Samples Accounted For Super Scan Surveys Total Activity Surveys Exposure Rate Surveys NA	NA NA RCT PRE
Volumetric Samples All Surveys and Samples Accounted For ROSuper Scan Surveys Total Activity Surveys Exposure Rate Surveys NA	NA NA RCT PRE
All Surveys and Samples Accounted For Super Scan Surveys Total Activity Surveys £xposure Rate Surveys	RCT PRE
Super Scan Surveys Total Activity Surveys £ Exposure Rate Surveys NA	
Total Activity Surveys £xposure Rate Surveys \$\times A\$	1 6
Exposure Rate Surveys AA	
NA	1 1
Removable Surveys	NA NA
Λ	1 1-
Media Samples	CEN EDW
Volumetric Samples	NA NA
Comments	

Pase superceded 1844 4/12/00 Change #4

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I	NSTRUMENT D	ATA	and the second s	ni immi i miisani in my kaasmatamisen ny sarata m	and the second properties of an arrangement of the second	The state of the s				
Mfg.	Mfg			Survey Tv	ne:					
Model	Model	Model		Survey Type:Building:						
Serial #	Serial #	Serial #	f							
Cal Due	Cal Due	Cal Du	e	Location* Purpose						
Bkg.	Bkg.									
Efficiency	Efficiency	Efficie	ncy	RWP#						
MDA	MDA	MDA								
				Date		Time.				
Mfg	Mfg.	Mfg								
Model	Model	Model		RCT	/	<u></u>				
Serial #	Serial #	Serial #	Serial #		Print name	Signatu	re Emp. #			
Cal Due	Cal Due	Cal Du	Cal Due				•			
Bkg	Bkg.	Bkg.	Bkg			<u> </u>	/			
Efficiency	Efficiency	Efficien	Efficiency		rint name	Signatu	re Emp#			
MDA	MDA	\MDA_								
PRL#:										
REMOVABLE Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9. 10 11 12 13 14 15 16 17. 18 19 20 21 22	REMOVABLE Beta DPM/100 cm² I	DIRECT Alpha	DIRECT Beta DPM/100 cm²	REMOVABLE Alpha bpM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²			
23 24 25 Date Reviewed:	RS	Supervision		48	/					
				nt Name		Signature	Emn #			

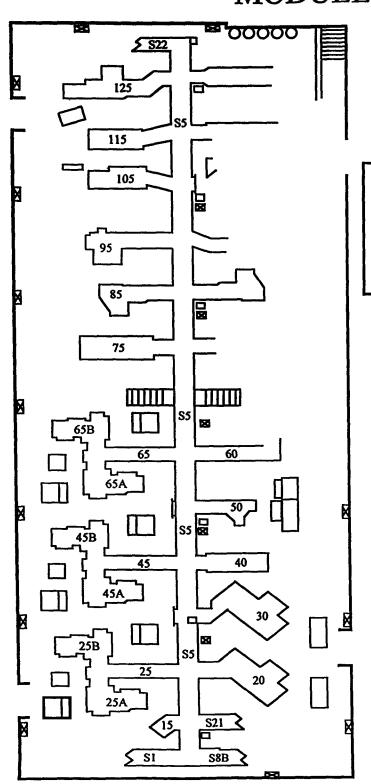
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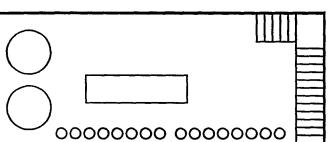
RADIOLOGICAL SAFETY

ROLY Y POATS LOVE A CR**EWEAL TEACHMONDER S** PR

Drawing Showing Survey Points

MODULE C





Rev. 05/98

STRUMENT DATA	
Mfg Eberline	Mfg NeTech
Model Sac-4	Model Electra
Serial # <u>837</u>	Serial # 3265
Cal Due 5-17 00	Cal Due 7-300
Bkg <u>0.5cpm</u>	Bkg 2.0 cp,n
Efficiency 33%	Efficiency 2/6/
MDA 15 L dpm	MDA 94 dpm
Mfg Eberline	Mfg NETech
Model BC-4	Model Electia
Serial # <u>833</u>	Serial # 3120
Cal Due 7-14-00	Cal Due 4-24-00
Bkg <u>52 cpm</u>	Bkg 2000pm
Efficiency 25%	Efficiency 12/09
MDA 110.4 dpm	MDA 94 dpm
	Mfg Eberline Model Sac-4 Serial # & 37 Cal Due 5-17 c b Bkg 0,5 c p m Efficiency 33% MDA 15 L d p m Mfg Eberline Model BC-4 Serial # & 3 3 Cal Due 1-14-c b Bkg 52 c p m Efficiency 25%

Survey 7	Гуре Со	ntam	ination
Building	707		
Location	Midale	C.	Survey Area 🖒
Purpose	Reconna	Level Characterization	
RWP#	00 707	1204	

Date 3-9 310-00 Time 1045

Comments Equipment Biased survey points

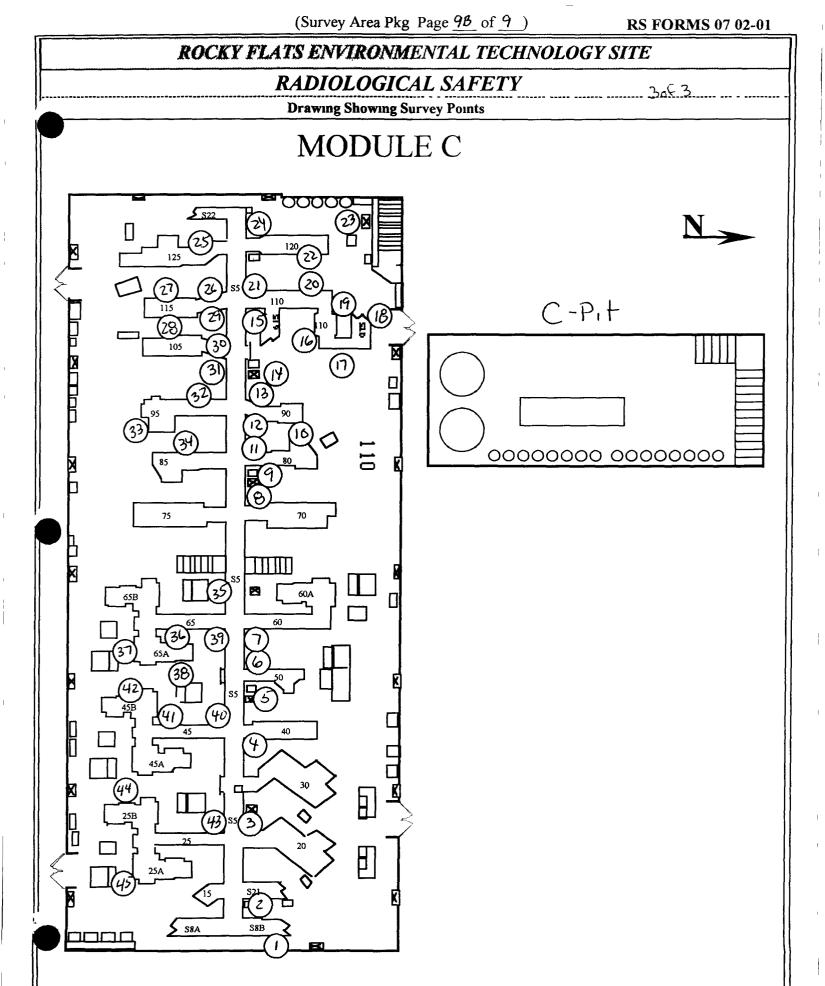
1 minute pats and swipes See map for locations
3 bkgd Counts alpha electra <8cpm (2,2,4)

SURVEY RESULTS

C	T - cathod/D - country	Rem	ovable	Total	C	L contraction to the second contraction of t	Rem	ovable	Total
Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha	Beta	Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha	Beta	Alpha
1	GB 588	0	-4	144	16	GB-LCE Poit 12	۵	20	996
2	GB 521	6	-40	108	17	LB CCE Port 18	30	24	4638
	S-5 CNUYR Port 109	60	-40	8490	18	Crit Brain	21	- 4	640
	S-5 CNUYR under Part 13	0	-36	84	19	7-C-110 Port 0019	9	-12	4637
	Air Vent #31	0	-32	336	20	68-7 6-110 Window 6033	27	44	4344
6	60C-50	3	٥	66	21	GA 7-0110 Poit 43	12	-28	216
7.	GB (-60	4	-24	L D	22	GB C120 Bagout Port	Ò	48	120
ĺ	GB C-70 S-5 CNVYR	3	40	46	23	3 Step rollaround stool	Ċ	C	240
i	Air Vent \$27	0	-37	222	24	5-5 CALYR Crit Drain	3	24	1080
	68 C-80	3	20	90	25	CB125 Port 28	3	ક	156
11.	68 C-80 S-5 CNUYR	<u>ر</u>	16	30	26	6B 115 Port 18	129	-36	37806
1	GBC-90 S-SCHUYR	0	-12	78	27	CB115 Port 16	36	-40	9092
	GB C-90 Port 365	3	-20	36	28	6B115 Perts	39	28	2646
14	Airvent #25	3	-28	354	29	CB 115 Port 5	147	٤	8178
15	S-5 CNUYR	6	-12	60	30	GB 105 5-5 CNVYR	3	44	12894

Date Reviewed: $3 \cdot 16 \cdot 00$ RS Supervision:

	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE										
						SAFETY 2 of 3					
						Points	Remo	voblo	Total		
swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	vable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha		Total Alpha		
31	GB 105 S-5CNUYR	ن	-20	33750	61				_/_		
32	68 C 95 Port 45	3_	<i>5</i> 2	642	62			··· -·· *	/		
33	GBC95 Port 17	0	-32.	990	63				<u>/</u>		
34	Crit Orain	3_	60	432	64			_/			
35	S-5 CNVYR Port 34	O	28	34	65			/			
36	GBC45B Port 0043	21	20	4716	4.2						
37	GB CG5 under Porto034	15	-36	144	67		-/				
38	GB C65 Port 0025	G	28	10086	68 8		-/-				
39	S-5 CNVYR Port 32	9	24	1263	69		/				
40.	GBC45 S-5CNUYR	51	-8	2418	70	/	/				
41	GB C458 on Heald sign	30	24	4338		/					
42	GBC45B POLL 0057	8/	36	3492	72	<i>f</i>					
43	GB 25 B 5-500huyR	٥	8	1824		 					
44	GB 25B Port 57	12	-24	2238	74_	1,/1					
	GB 25A Under Part 32	60	-36	4674	75	N/A					
46	END OF SURVEY			-	76_						
47				 - 	77	/					
48.			/		75						
49			/		79	 					
50					80						
51	/				81						
<u>52.</u>	NA				82						
53	[V/P]				84						
54 55.					85						
56	/		-		86	/					
<u>57.</u>					87		-				
)1 <u>37.</u>					88	/					
59.			, .		89						
60.	/				90	/					
<u> </u>	V						ليصييا				



IN	STRUMENT DATA	\	
Mfg <u>Eberline</u>	Mfg Eberline	Mfg NeTech	Survey Type Contamination
Model Sac-4	Model Sac-4	Model Electra	Building 707
Serial # 849	Serial # 837		Location //)edule C Survey Area (
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due 7-3 00	Purpose Reconnaisance Level Characterization
Bkg Oil com	Bkg O.2Com	Bkg 20 Com	
Efficiency 33%	Efficiency 33%	Efficiency , 2/2/	RWP#_((101/1/04
MDA 11.5 dem	MDA 129 dpm	MDA 911pm	De de la companya de
	,	•	Date 39 3-16 OC Time Days
Mfg <u>Eberline</u>	Mfg Eberline		
Model BC-4	Model BC-4	Model Electica	
	Serial # 833		
Cal Due <u>4-12-60</u>	Cal Due 7-14-00	Cal Due 4 24-15	
Bkg <u>51Cpm</u>	Bkg 53cpm	Bkg 20	
Efficiency 25%	Efficiency 25%	Efficiency , 2109	
MDA 109. 4 dpm	MDA ///3 dym	MDA 94 dpin	/ 8
Comments Ceilir	ng / Walls > 2 meter	s Brased survey p	points
1 minute pats ar	nd swipes See ma	p for locations	142
3 b Kayas Co	runts alpha	electra < 80	
3 bkgd a	ounts alpha	electra - 80	om (0,0,3) 3-10 00

SURVEY RESULTS

<u> </u>											
Swipe	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha		
1	WZZm	0	64	-12	16	W72m	0	14	0		
2	21 /1	0	64	-6	17	11 11	4	-40	0		
3.	11 11	0	-12	-12	18	n n	0	24	-4		
4.	<i>P</i> 11	0	-16	٤	19	11 11	3	48	-18		
5	17 11	0	-12	Ċ	20	n []	3	-40	-12		
6	11 11	٥	32	18	21	Ckiling	3	16	4		
7.	// p	0	40	C,	22	,,	0	ZC	-12		
8	11 11	0	88	12	23	/ \	C	12	<i>گ</i> ،		
9.) 1 1	0	-40	6	24	11	.3	-16	12		
10.	11 11	0	4	6	25	J i	0	£c	12		
11	n n	0	20	-6	26	11	3	28	-4		
12	η η	0	160	C	27	1)	0	32	۲.		
13	/I /I	3	24	-18	28	/)	0	-40	-12		
<u> 14.</u>	11 11	3	32	12	29) /	21	40	4		
15	11 11	3	3%	12	30	11		10	18		

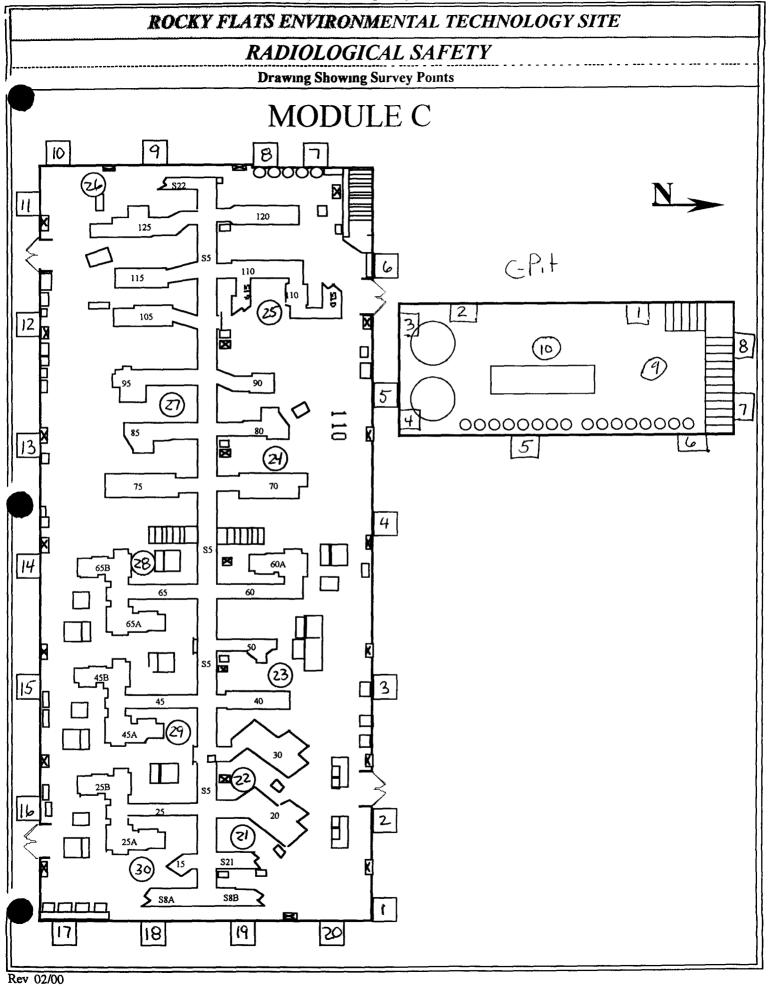
Date Reviewed: 3.16.00 RS Supervision

40 0412 1 42145 2217 10014101 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1										
IN	ISTRUMENT DATA	1								
1fg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination							
todel Sac-4	Model Sac-4	Model Electra	Building 707 Location CP, E Survey Area 247 O							
Serial # 849	Serial # 용성7	Serial # 1233	Location CP, E Survey Area 440							
Cal Due <u>4 /0 ισ</u>	Cal Due <u>5-17 00</u>	Cal Due <u>5-11-00</u>	Purpose Reconnaisance Level Characterization							
Bkg Uil Com	Bkg 1.0 Cpm	Bkg 10 cpm								
Efficiency 33%			RWP#_00707/204							
MDA <u>12.9 Jp ha</u>	MDA <u>115dpm</u>	MDA <u>94 dpm</u>	Date 3/4-00 Time							
Mfg Eberline	Mfg _ Eberline	Mfg \								
Model BC-4	Model BC-4	Model								
Sernal # <u> </u>	Serial #_ £ 33	Serial #								
Cal Due <u>4-12 co</u>	Cal Due <u>7-14 00</u>	Cal Due								
	Bkg 52 dem RL	Bkg	RCT							
Efficiency 25%		Efficiency	Print name / Signature / Emp #							
8	MDA /104 dpm	MDA	I I I I I I I I I I I I I I I I I I I							
	ng / Walls > 2 meter		points							
1 minute pats a	nd swipes See ma	p for locations	BKCO - 8CALL							
3 brad cou	nts alpha s	lutra 18com	(1,1,3)							
		CTIDVEV	DECIH TC							

SURVEY RESULTS

Swipe	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	w >7.m	3	-12	4	16	`			
2	71 //	3	-8	66	17				
3	11 11	6	- 28	24	18				į
4	Ji ji	G	-8	120	19				
5	// //	1632	-16	12	20		/		
6	11 11	159	14	18	21				
7	11 1	64	-52	888	22	N/	A		
8	// //	3	28	24	23				
9	Ceilina	Ć	-48	12	24				
10	Ceiling Ceiling	3	-44	30	25				
11	End of Survey				26				
12	7				27				
13	NA				28				
14					29				
<u>z</u> 5					30				

Date Reviewed. 3 16 00 RS Supervision.



IN	ISTRUMENT DATA	Ā	
Mfg Eberline	MfgEberline	Mfg <u>NeTech</u>	Survey Type Contamination
Model Sac-4	Model_Sac-4	Model Electra	Building 707
Serial # <u>849</u>	Senal # 837	Serial # 1518	Location Module C Survey Area O
Cal Due <u>4-100</u> 2	Cal Due <u>5-17-00</u>	Cal Due 4-29 66	Purpose Reconnaisance Level Characterization
Bkg Occom	Bkg 0.5cpm	Bkg 20 Cpm	
Efficiency 33%	Efficiency 33%	Efficiency, 2/8/	RWP#_00707 1204
MDA 8.23pin	MDA 15,Lapin	MDA 94 dpm	Date 3-10-00 Time Days
Mfg Eberline	Mfg _ Eberline	Mfg NE Tech	
Model BC-4			
	Serial # 833		
8.8	Cal Due 7-14-00		
	Bkg 52cpm		
	Efficiency 25%		
	MDA 116.4 dpm		
Comments Floor	·/ Walls < 2 meters	Brased survey por	oints
1 m ² scans, 1 m	unute pats and swipe	es See map for lo	ocations /of 7
3 bkgd Cou	nts alpha e	electra 28cpi	
		1	

SURVEY RESULTS

Swipe	Location\Description	Removable		Total	Swipe	Location\Description	Removable		Total
#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
1	FCPit under GB	9	16	360	16				
2	S-BB Funder GB	3	-20	360	17				
3	Funder GB C40	12	56	6	18				
4	Funder 6B (BC	0	-4	12	19				
	Funder 5-19 CNUYR	3	-24	1416	20				
H	F Crit Diain	3	28	630	21				
7	Fundre GB 125	٥	40	18	22		_		
8	Funder 68 105	3	34	<i>5</i> 4	23	N/A			
9	Funder GB L5B	0	44	30	24				
	Funder GB 45B	0	-16	120	25				
11	Wall next to GB 45B	0	16	936	26				
	Funder GB 45B	4	-40	/350	27				
13.	Funder 68 45A CNUYRIOS	45	0	1084	28				
	Fmat 68 250	3	24	1764	29				
15	END OF SURVEY				30				

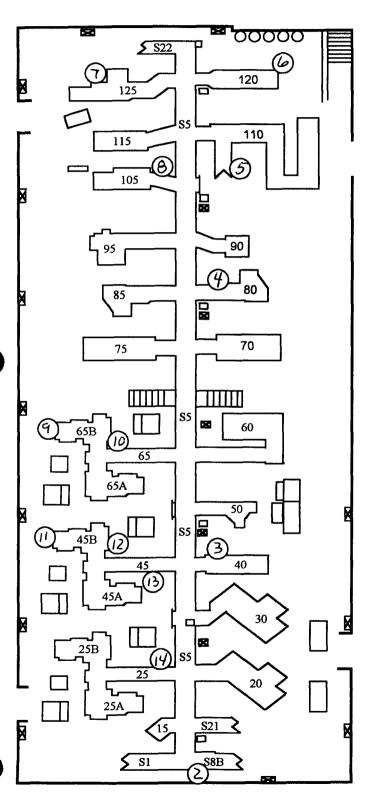
Date Reviewed: 3-1600 RS Supervision:

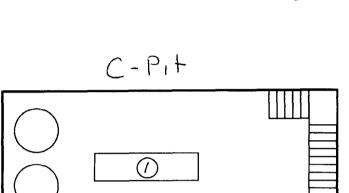


RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE C





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Rev 02/00

IN	ISTRUMENT DATA	A	
Mfg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination
Model Sac-4	Model Sac-4	Model Electra	Building
Serial # <u>\$49</u>	Serial # 837	Serial # 3265	Location C Module Survey Area
Cal Due <u>4-100</u> 0	Cal Due <u>5-170</u> 0	Cal Due 7-3 60	Purpose Reconnaisance Level Characterization
Bkg Oil Com	Bkg 0.4 cpm		
Efficiency 33%	Efficiency_33%	Efficiency 2/01	RWP#_06_767_1264
MDA 11.5 dpm	MDA 14.60pm		
Mfg <u>Eberline</u>	Mfg Eberline	Mfg NE Tech	1 '
Model BC-4	Model BC-4	Model Electra	
Serial # <u>872</u>	Serial # <u>633</u>	Serial # <u>/389</u>	
Cal Due <u>4 12 0</u> 0	Cal Due 7-14 00	Cal Due 6-29-00	
	Bkg <u>44 cpm</u>	Bkg O.O.Com	
Efficiency 25%			
MDA /C5.56pm	MDA 102Adpm	MDA 94 dpm	
Comments Floor	/ Walls < 2 meters	Unbiased survey	points $1 \circ 1 \circ 2 \circ 4$ ocations $3 \circ 7 \circ 6$
1 m ² scans, 1 m	unute pats and swipe	es See map for lo	ocations 3-7 co
3 bkgd coun	ts alpha elec	tra 18com	(1,1,3) 3-6-00
3 b Kard com	nts alpha ele	ifra - d cpm	(2,3,3) 3700
		CTIDAZENZI	DECIT TO

SURVEY RESULTS

Swipe #	Location\Description (Results in DPM/100cm ²)	Removable Alpha Beta		Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	F	0	12	6	16	F	6	16	60
2	F	6	36	150	17	ſ-	15	32	144
3.	F	3	28	54	18	F	9	25	24
4	F	3	4	6	19	F	C.	24	24
5	F	0	16	66	20	F	3	6,0	486
6	F	6	76	36	21	F	12	()	60
7	F	0	36	12	22	F	9	-28	258
8	F	٥	-40	18	23_	F	4	44	24
9	F	6	40	18	24	F	9	24	162
10	F	0	32	18	25	F	С	24	144
11	F	0	40	18	26	F	C	40	138
12.	F	0	16	12	27	F	C	<u>84</u>	78
13.	<i>/</i> -	\mathcal{C}	-37	66	28	F	0	-40	12
14	F	0	8	76	29	F	C	28	40
15.	F	.3	0	0	30	F	15	4	270

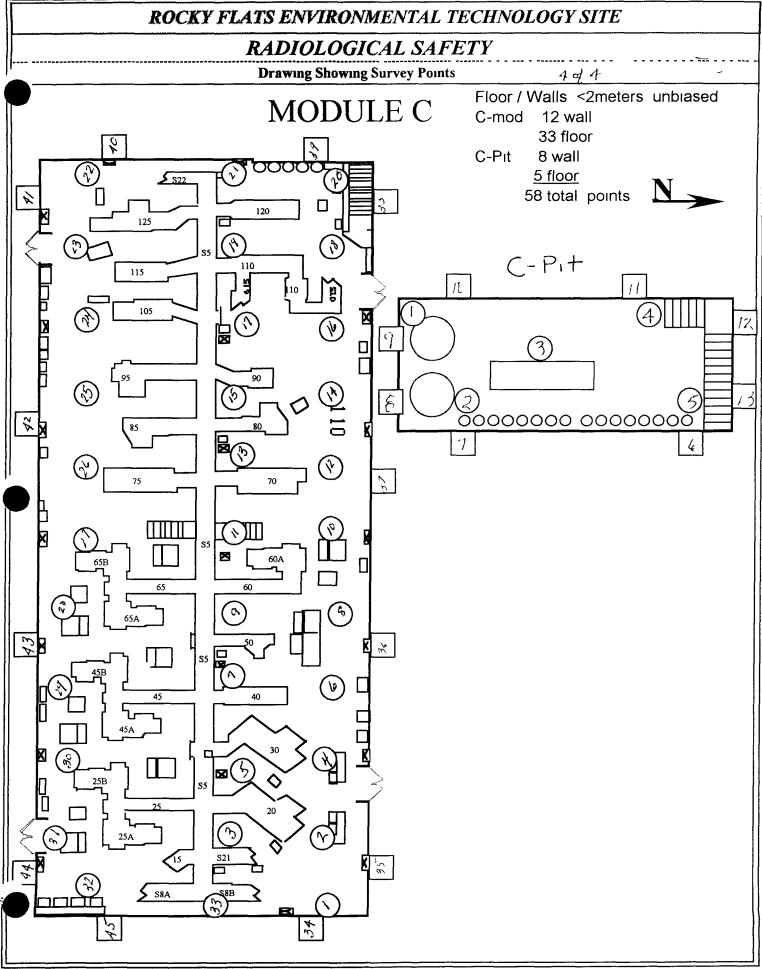
Date Reviewed: $3 - 16 \cdot 00$ RS Supervision:

	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE											
	RADIOLOGICAL SAFETY											
	\						roints	3 7-00				
	Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha	Beta	Total Alpha		
	31	F	3	-48	30	61		ļ				
	32	<u>F</u>	9	60	54	62	ジ		ļ			
	33.	F	c	-40	34_	63	\	-				
	34.	WKZmeters	6	24	34	64						
	35.) ! II	C	12	42	65		-				
	36	11 (1	0	-16	12	66			ļ 	<u> </u>		
	37	11 11	0	4	121	67		ļ				
	38	11 11	21	-52	1878	68				 		
	39.	$\mu = \mu$	48	-4	7596	69	\					
	40.)1	С	-4	18	70	\					
	41	1) 11	0	84	18	71						
	42.	jj jt	3	20	18	72	\					
	<u>43</u>	11 11	3	48	4444	73	\					
	44.	11 11	0	-16	48	74		ļ				
	45	11 (1	3	-24	36	75	\					
	462	END OF SURVEY				76	\					
	47					77	`\					
	48.					75	\					
t	49.					79	\	 -				
	50.					80		<u> </u>				
	51					81		-\-				
	52					82						
	53.					83						
	54					84			\ -			
	55.					85			<u> </u>			
	56					86						
	57					87						
	<u>58.</u>					88				\rightarrow		
	59.				7	89				\longrightarrow		
	60.					90		<u></u>				

	RUCKI FLAIS ENVIRONMENIAL LECTIVOLUGI SILE											
	IN	STRUMENT DAT	A									
Mfg _	Eberline	Mfg Eberline	Mfg NeTe	ch	Surv	ey Type. <u>C</u>	ontaminatio	<u>n</u>				
Model	Sac-4	Model Sac-4	Model Electr	ra		ıng <u>707</u>						
Serial 7	# 849	Serial # 837	Serial # 124	15	Locat	ion <u>CPit</u>		Survey Ar				
Cal Du	ie 4 10 C t	Cal Due <u>5-17 00</u>	Cal Due <u>7-3</u>	3-00	Purpo	se Reconn	aisance Level (Characteriza	tion			
Bkg <u>c</u>	0.2 Cp in	Bkg rizepin	Bkg 10cx	m								
Efficie	ncy_33%	Efficiency 33%	Efficiency, 2		RW	P# <u>CC 70</u>	1 1204					
MDA_	12.9 DPM	MDA 13,9 DPM	MDA <u>44 a</u>	pm	Date		පු රට Time <u>L</u>	10.15				
Mfg	Eberline	Mfg Eberline	Mfg <u>NF 7</u>	5ch	Date	7700	8 co Time c	7				
	BC-4	Model BC-4										
	# 872								-			
		Cal Due 7-14-60										
		Bkg 50 cpm	Bkg //Dep									
		Efficiency 25%		2101		Print name	/ Signatur	re / En	n #			
. .		MDA 108.4 DPM				T TIME HAME	l Saginara	, 31	·P "			
Comm	ents Floor	/ Walls < 2 meters			points	3	41					
1 m^2	scans, 1 m	inute pats and swip	es See map	for lo	cation							
3 k	kard cou	nts alpha e	electra =			(0, 2, 4)	3766					
_3 k	skad co			8 cpn		(c,c,3)	3800					
			SUR	VEY]	RESU	LTS						
Swipe #	Location\Desc			Total Alpha	Swipe	Location\Desc		Removable Alpha Beta	Total Alpha			

Swipe #		Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
	1	F	6	-4	12	16				
	2	F	648	- <i>\</i> 2c	7800	17	*			
	3.	F	84	4	1650	18				
	4	F	6	16	78	19				
	5	F	c	ව	36	20				
	6	10<1m	9	-28	678	21				_
	7	11 71	3480	-2C	8910	22				
	8	11 11	9	-40	366	23				
	9	11 //	4	-12	768	24				
1	0	11 11	C	16	186	25				
1	1	// //	3	48	540	26				
1	2	11 11	0	40	54	27				
1	3		204	-16	4300	28				
1	4	14 End of Sun	٠			29				
1:	5.					30				

Date Reviewed. 3-16-00 RS Supervision:



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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002		Building 707					
Survey Area · P		Survey Unit N/A					
Initiator/ Date	Release Date	Validation Date	Closure Date				
D 10/25/49	12/21/99	12my 6/14/00	150M 6/14/00				

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3				
Survey Area P		Survey Unit N/A	Λ	Area (m ²) 634				
		OF MODULE D (D CONTAMINA	(ROOM 115) BUILDING 707 RADIOLOGICAL ATION AREAS					
Survey Type			Classification					
RLC Survey X	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown X			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans			
45	37	40	4	0	52			
Building		Туре	**************************************	Survey Area				
Survey Unit			Area (m²)					
Survey Unit Description								
Survey Type			Classification					
RLC Survey □	FSS 🗆		Class 1 □ Class	2 □ Class 3 □ U	Jnknown 🗆			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans			
Building		Туре		Survey Area				
Building Survey Unit		Туре	Area (m²)	Survey Area				
	cription	Туре	Area (m²)	Survey Area				
Survey Unit	cription	Туре	Area (m²) Classification	Survey Area				
Survey Unit Desc	FSS 🗆	Туре			Jnknown □			
Survey Unit Description Survey Type		Type Equipment Surface Activity Measurements	Classification		Jnknown □ Surface Activity Scans			
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Bussed Surface Activity	Equipment Surface Activity	Classification Class 1	2 □ Class 3 □ U Volumetric	Surface Activity			
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Bussed Surface Activity	Equipment Surface Activity	Classification Class 1	2 □ Class 3 □ U Volumetric	Surface Activity			
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements	FSS Bussed Surface Activity	Equipment Surface Activity Measurements	Classification Class 1	2 □ Class 3 □ U Volumetric Samples	Surface Activity			
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building	FSS Bussed Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1	2 □ Class 3 □ U Volumetric Samples	Surface Activity			
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit	FSS Bussed Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1	2 □ Class 3 □ U Volumetric Samples	Surface Activity			
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description	FSS Bussed Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 □ Class Media Samples Area (m²)	2 Class 3 U Volumetric Samples Survey Area	Surface Activity			
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description Survey Unit Description	FSS Biased Surface Activity Measurements Cription	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples Area (m²)	2 Class 3 U Volumetric Samples Survey Area	Surface Activity Scans			



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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002		Building. 707								
Survey Area: P		Survey Unit N/A								
Survey Unit Description: INSIDE RADIOLOGICAL AREAS ARE POS										
Building Information:										
Survey Type Reconnaissance Level Cha	aracterization S	urvey X Final Status Survey								
Building Type Type 1 ☐ Type 2 ☐	Building Type Type 1 Type 2 Type 3 X									
Classification Class 1 □ Class 2 □	Class 3 U	known X								
Contaminants of Concern Plutonium X	Uranium X	Other 🗖								
Justification for Classification: N	/A									
Special Support Requirements: I instrumentation may be required for			li i							
Special Safety Precautions: Acce Review RWP requirements and sur overheads										
Isolation Controls:										
Level 1 □ Level 2 □ N/A X										
Labeling Requirements: NONE										
Survey Package Implementation	}									
		2 1	, <u>, </u>							
			177							
RESS Manager Printed Name En	nployee # RES	S Manager Signature	Date							

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Package ID: 99-0002		Building 707		
Survey Area· P		Survey Unit N/A		
	aption INSIDE OF MODULE D (AREAS ARE POSTED AS FIXED			
	Mınımum Survey/Sampling M	easurement Requirements		
Measurement	Number and Type	Comments		
Surface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1		
Measurements	45 <u>unbiased</u> survey points uniformly distribution throughout room 115	SEE NOTE 2		
	7 biased survey points at the following lo	cations SEE NOTE 3		
	- 5 points around floors adjacent to co contamination areas (where accessib			
	- 2 points near criticality drain location			
	CEILINGS/WALLS > 2 meters			
	30 <u>biased</u> surveys (divided evenly betwee and ceiling when possible) with focus on following areas of room 115	n wall		
	- Walls behind process lines			
	- Ceilings above GB's			
	- Ceilings/walls adjacent to c-cells/ten	ts		
	- Stained or discolored areas			
	 Walls/ceilings near GB's mounted has walls 	igh on		
	- Areas around pipe or other penetration	ons		
	EQUIPMENT			
	40 <u>biased</u> survey points on equipment wit or more samples from	h one		
	- Each GB "section" extending from the (center) GB lines	ne main		
	- Gloveboxes which have visible leaks contained spills beneath them	or		
	- 2 surveys points at each of 5 room e ducts	xhaust		
	- Bag-ın/bag out ports to GB lines			
	- 5 survey points on top of overhead p (where locations are accessible throu	iping		

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Package ID: 99-0002		Building 707			
Survey Area: P		Survey Unit N/A			
	ription: INSIDE OF MODULE D AREAS ARE POSTED AS FIXE				
	Minimum Survey/Sampling M	leasurement Requirements			
Measurement	Number and Type	Comments			
Surface Scanning	FLOORS/WALLS < 2 meters	SEE NOTE 1			
	52 1 m ² surface scans shall be taken at electron identified for surface activity	SEE NOTE 2			
	measurements Locations found to be al	ove the SEE NOTE 3			
	DCGL will be noted CEILINGS/WALLS > 2 meters NON EQUIPMENT NONE	SEE NOTE 4			
Media Samples	Total of 4 biased (paint) media samples follows	aken as SEE NOTE 5			
	- 1 sample near one of the entrances module - 1 sample around a posted HCA	o the			
	1 sample beneath a process GB 1 sample near a criticality drain				
Volumetric NONE Samples					
omit proo					
Isotopic Gamma Scans	NONE				

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Packa	ge ID: 99-0002	Building 707
Surve	y Area: P	Survey Unit N/A
Surve	y Unit Description: INSIDE OF MODULE	D (ROOM 115) BUILDING 707
RADI	OLOGICAL AREAS ARE POSTED AS FIX	ED CONTAMINATION AREAS

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for a pha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media."

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample.
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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Package ID: 99-0002	Building 707			
Survey Area P	Survey Unit N/A			
Survey Unit Description: INSIDE OF MODULE D (ROOM 115) BUILDING 707				

Survey Unit Description INSIDE OF MODULE D (ROOM 115) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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Package ID: 99-0002	Building 707				
Survey Area: P	Survey Unit N/A				
Survey Unit Description INSIDE OF MODULE D (ROOM 115) BUILDING 707					
RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS					

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radion progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building 707				
Survey Area: P	Survey Unit N/A				
Survey Unit Description: INSIDE OF MODULE D (ROOM 115) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS					
Sumov/Sample	na Instructions				

SUPPLEMENTAL INSTRUCTIONS

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos.
- 4- Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

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SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID · 99-0002		Building 707			
Survey Area:	P	Survey Unit N/A			
Change #	Description		Initiator/ Date	PRE	
/	Added page 6A		01 12/2/99	ME	
l— 2 —	Teleted Det to die	of BLAN & meas	De 12/2/09	ADE W	9/17/00
2	Replaced pg 6 to elim Replaced pg 6 to elim	viole see. A' most	1000/1/00	MIE	
3	Repriced pr 6A w/	nevised of	90 01/18/20	ME	
4	Maps & date	gh 9I with Ednytetal	1/12/00	d	
					i.
					.
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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID. 99-0002	Building 707					
Survey Area. P	Su	Survey Unit N/A				
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey □						
All Documentation Reviewed for Completion		RCT Supervisor	PRE			
Scan Surveys		1	d-			
Total Activity Surveys		1	d			
Exposure Rate Surveys		NA	NA			
Removable Surveys		J	do			
Media Samples		Œ	EM			
Volumetric Samples		NA	NA			
All Surveys and Samples Accounted For		RCT Supervisor	PRE			
Scan Surveys		1	ds-			
Total Activity Surveys		1	J-			
Exposure Rate Surveys		NA	NA			
Removable Surveys		ļ	do			
Media Samples		Ols	KON			
Volumetric Samples		NA	NA			
Comments	,					
			Date			



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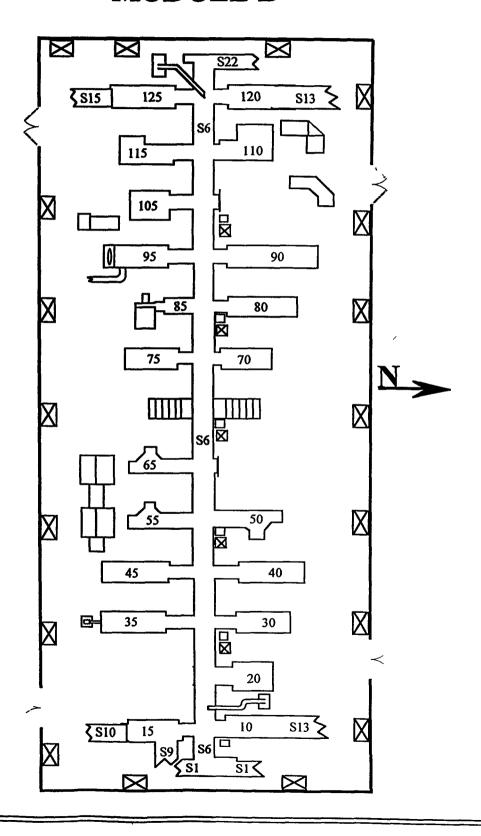
	Not Not F		A. C. VEE	NII AM. TA	CENSOLT)	: SIIII		
T	NSTRUMENT	DATA	The second secon	THE RESERVE OF THE PROPERTY OF				
Mfg.	Mfg		ı	Survey Tv	ne:			
Model	Model	Model						
Serial #	Model Serial #							
Cal Due	Cal Due							
				Turpose				
Bkg.	Bkg.			_{RWP} #				
Efficiency	Efficiency			RWP#				
MDA	MDA	NDA_		Date		Time		
Mfa	Mfg	Mfg		Date		IIIIC		
Mfg Model	Model	Model		RCT		1	,	
Serial #	Serial #				rint name	Signatu	ire Emp #	
Cal Due		Cal Due		•	Tine name	Oignate	no Emp #	
Bkg	Bkg.			RCT		/	,	
Efficiency	Efficiency	Efficience	CV.		rint name	Signatu	ıre Emp #	
MDA		MDA_	-J	_		~-6		
REMOVABLE Alpha DPM/100 cm²	Beta DPM/100 cm ²	DIRECT Alpha	Beta PM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²	
2 3 4 5 6 7 8 9 10 11. 12 13 14 15 16 17 18 19 20 21 22 23 24 25				27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50				
Date Reviewed:_	P	RS Supervision:		nt Name		Stonature	/ Rmp.#	

RADIOLOGICAL SAFETY

Wernital increasing of a some

. Drawing Showing Survey Points

MODULE D



Rev 05/98

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE INSTRUMENT DATA Survey Type Contamination Mfg NeTech Mfg Eberline 1fg Eberline Building 707 odel Sac-4 Model Sac-4 Model Electra Location D - mod Survey Area P Serial # 837 Serial # 3265 Serial # 849 Reconnaisance Level Characterization Purpose d Due 4-10-00 Cal Due 5-17-00 Cal Due 7-3-00 Bkg 1.0 cpm Bkg Oil CPm Bkg O.O.cpm RWP# 00 - 707 - 1204 Efficiency 21.01% Efficiency 33% Efficiency 33% MDA 94 DPM MDA 8 LOPM MDA 115 0Pm Date 3-8-00 Time 1530 Mfg Eberline Mfg Eberline Mfg Model BC-4 Model BC-4 Model Serial # 872 Serial # 833 Serial # Cal Due 4-12-00 Cal Due 7-14:00 Cal Due MA Bkg 58 cpm Bkg 52 cpm Bkg Efficiency 25% Efficiency Efficiency 25% MDA 116 DPM MDA 110.4 DPM MDA Comments Floor / Walls < 2 meters Biased survey points 1 m² scans, 1 minute pats and swipes See map for locations 3 blad readings & 8cpm alpha (0, c, 4) reetra **SURVEY RESULTS** Removable Removable Total Total Swipe Swipe Location\Description Location\Description Beta Beta (Results in DPM/100cm²) Alpha Alpha Alpha Alpha (Results in DPM/100cm²) -40 0 6 CRIT DRAIN 16 54 0 52 Floor 17 0 -44 Floor 18 18 0 -4 Crit Drain 4 12 19 3 12 28 Floor 20 0 -20 30 6 21 Floor 16 6 22 Floor END OF SURVEY 8 23 9 24 10 25 11 26 12 27 13 28 29 14 30 ate Reviewed: 3-14 00 RS Supervision

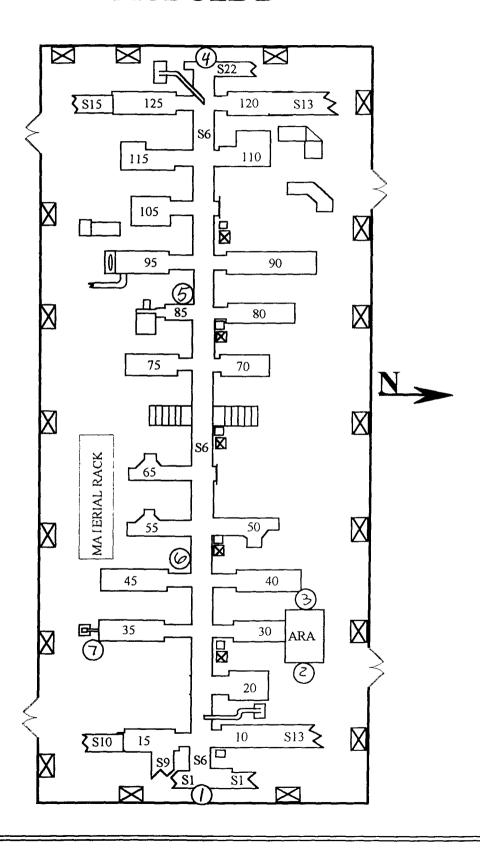
Rev 02/00

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RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE D



Rev 02/00

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE INSTRUMENT DATA Contamination Mfg Eberline Mfg Eberline Mfg NeTech Survey Type _ Model Sac-4 Model Sac-4 Building 707 Model Electra Damod Survey Area P Serial # 849 Serial # 837 Serial # 1389 Location Reconnaisance Level Characterization Cal Due 4-10-00 Cal Due 5-17-60 Cal Due 6-29 00 Purpose Bkg Oil CPM Bkg O.d COM Bkg a 3 0 CPM RWP# 00 - 70 7 - 1204 Efficiency 33% Efficiency20,77/ Efficiency 33% MDA 115 DPM MDA 12.9 DPm MDA 94 DPm Mfg Eberline Mfg Eberline Mfg Model BC-4 Model BC-4 Model Serial # 872 Serial # 833 Serial # N/A Cal Due 4-12-00 Cal Due 7-14-00 Cal Due / Bkg 51 Cpm Bkg 63cpm Bkg Efficiency 25% Efficiency 25% Efficiency MDA 109.4 DPm MDA 120,4 DPm MODA Comments Ceiling / Walls > 2 meters Biased survey points 1 minute pats and swipes See map for locations 3 background readings alpha - 8cpm (1,3,3) electra **SURVEY RESULTS** Removable Removable Total Total Swipe Location\Description Swipe Location\Description Beta Alpha (Results in DPM/100cm²) Beta (Results in DPM/100cm²) Alpha Alpha Alpha WALLS la WALLS 12 0 120 18.0 16 (áo) 3 0 (a8) 54.0 17 300 (40) 30.0 18.0 h 3 18. (ia) 3 0 600 12.0 4 19 11 (36) (ia oll 6.0 5 3 18.0 11 11 20 60 32) 6 0 (48) 18.0 11 11 21 (a8) 6.0 7. (1a.0) (20) 0 n 11 22 0 (1a) 0 (ao) 0 18,0 8 12.0 н 1) 23 3 3 180 9 (a4) 6.0 (Ia) 24 OUERHEAD 11 0 11 (a0) £4.0 0 36 6.0 10 25 48.0 11 0 (32) (6,0) \circ 12 11 26 0 (6.0)0 12 (44) 12 6.0 27 11 3 (6.0)3 8 36.0 13 11 28 . 3 **a4** 36.0 36 44.0 14 11 29 11 (ia) 12,0 15 0 42.0 30 Pate Reviewed: 3-14.00 RS Supervision:

Signature

Rev 02/00

ROCKY FLAIS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL : Drawing Showing Survey Points >2 meters Bu biased points E S13 \ 120 125 110 115 105 90 95 80 X (5 (15) 70 75 <u>(26)</u> S6 X (30) MATERIAL RACK 65 50 55 区 (13) (29) 40 45 AR 35 30 (I) (18) 10 <u>ξ S10</u>

Rev 05/98

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE **INSTRUMENT DATA** Contamination Survey Type Mfg Eberline Mfg NeTech. Mfg Eberline 707 Model Electra Building Model Sac-4 Model Sac-4 D-MOU Survey Area P Serial # 3265 serial # 849 Serial # 837 Location Reconnaisance Level Characterization al Due 4-10-00 Cal Due 7-3- ∞ Cal Due 5-17-00 Purpose Bkg OOCPM Bkg 0.5 cpm Bkg a 3 Ocpm RWP# 00-707-1204 Efficiency 2101/ Efficiency 33% Efficiency 33% MDA 166 Opm MDA 94 50m MDA 8 2 DPm 3-10-00 Time 1500 Mfg Eberline Mfg Eberline Mfg Model BC-4 Model BC-4 Model Serial #_/ Serial # 87Q Serial # 833 Cal Due 4-12-00 Cal Due 7-14-00 Cal Due Bkg 52 cpm Bkg 61cpm Bkg Efficiency 25% Efficiency Efficiency 25% MDA MDA 118 6 DPM MDA 1104 DPM Comments Equipment Biased survey points 1 minute pats and swipes See map for locations 3 background counts alpha 48cpm (0,3,7) electra **SURVEY RESULTS** Removable Total Removable Total Swipe Swipe Location\Description Location\Description Alpha Beta Alpha Beta # (Results in DPM/100cm²) Alpha (Results in DPM/100cm²) Alpha 0 GB0 48.0 36 DUCT 162,0 16 EXHAUST 0 (60` (a4)144.0 (48) (001a) 2 11 BAG OUT 11 17 (24) 6B 39 0 (8)3 *(100,0 18 582,0 +1 0 12 GB - SAMPLE PORT 11 a76.0 (1a) 54 0 3 4 GB 0 11 0 0 36 180.0 (4)(60 5 20 BAG OUT (0016) 0 3 6 11 21 30,0 11 102.0 8 0 3 7 h 270.0 22 BAG OUT (COIZ) 48 12,0 11 8 0 6B (16) 11 0 8 102,0 23 6.0 " 9 0 12 GB 0 24 90.0 76 1; 1818. 11 0 6B 48 8 1K \$04 d 6 10

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

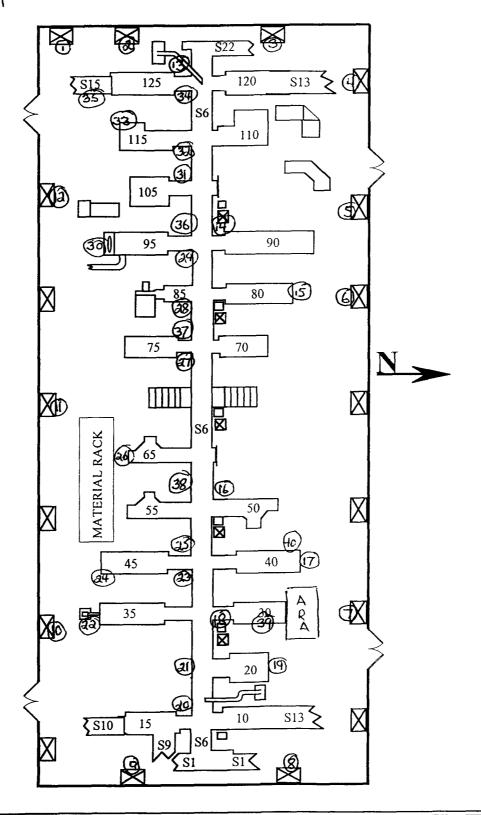
		Drawing Showing Survey Points							
wipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	Peta Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	vable Beta	Total Alpha
31	GB	٥	(36)	(6.0)	61				
32	Gβ	0	0	894.0	62				
33	GВ	30	52	9.7K	63				
34	GB	3	(40)	18.0	64				
35	GB	0	(16)	60	65				
36	OUERHEAD PIPING	0	8	60	66			/	
37.	li .	3	(44)	ia o	67				
38	i)	0	4	60	68				
39	"	0	8	360	69				
40.	4	0	(ia)	10.0	70				
41	END OF SURVEY				71		}		
42					72				
1 43.			A		73				
14					74				
5.					75				
46		A			76	MA			
47					77				
48					75				
49.					79				
50	N/A				80				
51					81				
52					82				
53					83				
54.					84				
55					85				
56.					86				
<u>57.</u>					87				
<u>'8.</u>					88				
6 9.	/	$-\downarrow$			89				
60. /					90.]

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Drawing Showing Survey Points

Equipment 40 biased points MODULE D



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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE INSTRUMENT DATA Survey Type Contamination Mfg Eberline Mfg Eberline Mfg NeTech Building 707 Model Sac-4 Model Electra Model Sac-4 Location <u>Module</u> D Survey Area P Serial # 1245 Serial # 837 Senal # 849 Reconnaisance Level Characterization Purpose Cal Due 4-10-03 Cal Due 5-17-00 Cal Due 7 3 00 Bkg - 30 com Bkg ol con Bkg O, 1 con RWP # <u>OO</u> - 707 - 1204 Efficiency 33% Efficiency 22 36% Efficiency 33% MDA 115 dom MDA 148 dpm MDA 94 dpm_ Date 3-6-00 Time 1600 Mfg Eberline Mfg Mfg Eberline Model BC-4 Model \ Model BC-4 Serial # 872 Serial # 833 Serial # Cal Due A Cal Due 4-12 03 Cal Due 7-14-00 Bkg 47 cpm Bkg 44 cpm Bkg Efficiency 25% Efficiency 25% Efficiency Print name / Signature / Emp # MDA 1055 dam MDA 1034 dpm MDA Comments Floor / Walls < 2 meters Unbiased survey points 1 m² scans, 1 minute pats and swipes See map for locations 3 broad Counts alpha 28cpm electra (1,4,5) **SURVEY RESULTS** Removable Removable Total Total Location\Description Swipe Location\Description Swipe (Results in DPM/100cm²) Beta (Results in DPM/100cm²) Alpha Alpha Alpha Beta Alpha 48 \bigcirc 0 8 12 16 Flour 64 F/001 28 44 12 \bigcirc 18 17 Floor \bigcirc Flour -24 12 21 -4 Floor 0 18 Floor Floor 0 18 56 19 32 Floor \bigcirc 36 32 12 F/00r 20 Floor 18 24 12 Flour \bigcirc 21 Floor 3 24 0 88 Floor 30 22 16 Floor -8 0 -6 92 24 8 Flour 23 Floor 3 9 20 90 24 0 Floor 32Y Floor 12 -12 Floor 0 60 25 0 10 36 F/ODI 68 Floor 32 6 26 11 Floor -12 -24 -12 27 Floor 0 12 Floor 24 -/2 13 32 Floor 28 0 Floor Floor O40 29 14 Floor 0 88 Floor 66 30 Floor Date Reviewed 3-1400 RS Supervision

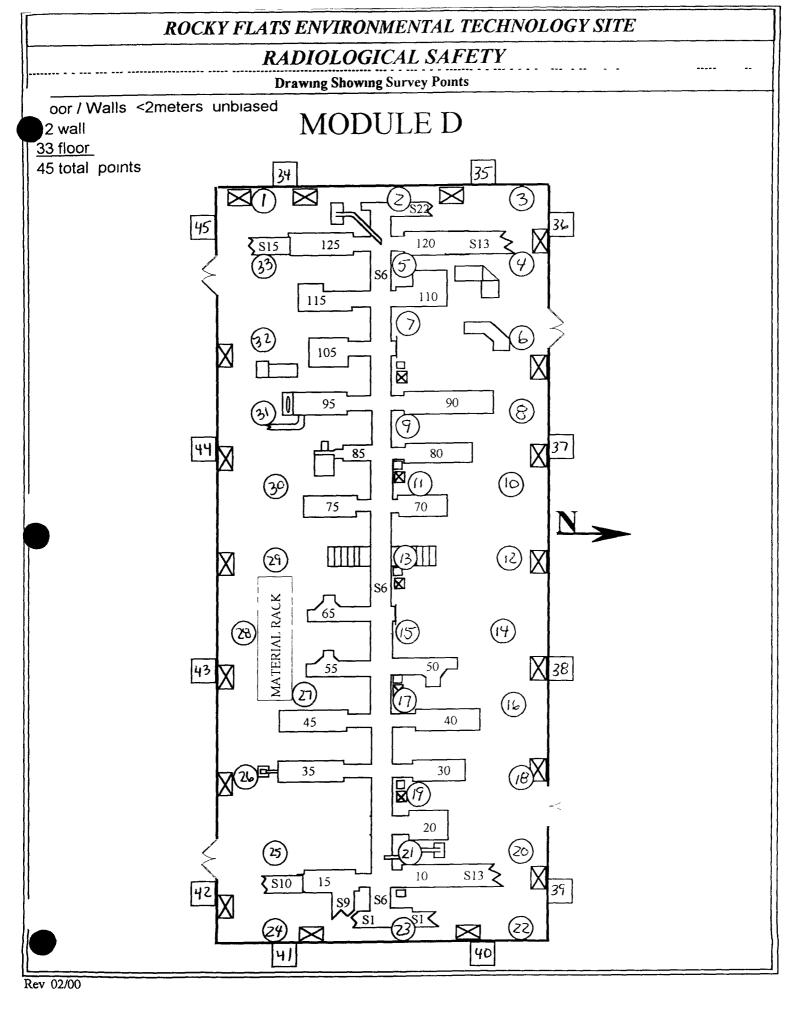
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Drawing Showing Survey Points									
Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	vable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	Beta	Total Alpha
31	Floor	0	24	12	61		<u> </u>		
32	Floor	0	-32	6	62				
33	Hoor	0	64	6	63			/	
34.	Wall	3	40	18	64				
35	Wall	0	44	-6	65				
36	woll	0	36	0	66			/	
37	Wall	3	100	12	67				
38	Wall	3	28	12	68		/		
39	Woll	0	32	-6	69		/		
40.	well	3	16	6	70	/			
41.	wall	0	76	6	71				
42		0	8	12	72				
43.	Wall	0	4	6	73				
. 44	wall	0	4	-12	74				
45.	Wall	0	-60	30	75	N/A			
46.	END of Survey			/	76				
47			/		77	/			
48					75				
49.		\mathcal{A}			79	/			
50					80				
51.					81				
52					82	/			
53.	N/A				83				
54					84				
55.					85				
56					86				
57					87				
<u>58.</u>			}		88				
9.	/				89				
60.	<u>′</u>			l	90	/			

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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002		Building 707 Survey Unit N/A				
Survey Area · Q						
Initiator/ Date	Release Date	Validation Date	Closure Date			
A) 10/25/19	JA 12/21/99	150my 6/14/00	120M 6/14/00			
İ						
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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707		Type 3			
Survey Area Q		Survey Unit N/A	A Area (m^2) 634				
Survey Unit Desc	cription INSIDE	OF MODULE I	E (ROOM 120)				
Survey Type			Classification				
RLC Survey X FSS □			Class 1 Class	2 □ Class 3 □ U	J nknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
45	37	40	4	0	52		
Building		Туре		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type			Classification				
RLC Survey □	FSS 🗆		Class 1 □ Class	2 □ Class 3 □ U	Jnknown 🗆		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре	Survey Area				
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type			Classification	-			
RLC Survey □	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown 🗆		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре	, , , , , , , , , , , , , , , , , , ,	Survey Area			
Survey Unit			Area (m²)				
Survey Unit Desc	Survey Unit Description						
Survey Type		Classification					
RLC Survey □ FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown 🗆			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707
Survey Area: Q	Survey Unit: N/A
Survey Unit Description: INSIDE OF MODULE	· · · · · · · · · · · · · · · · · · ·
RADIOLOGICAL AREAS ARE POSTED AS FIXI	ED CONTAMINATION AREAS
Building Information:	
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey
Building Type Type 1 🗆 Type 2 🗖 Type 3 X	
Classification Class 1 🗆 Class 2 🗆 Class 3 🗆 Un	known X
Contaminants of Concern Plutonium X Uranium X	Other 🗆
Justification for Classification: N/A	
Special Support Requirements: Ladder, manhainstrumentation may be required for access into	· ·
Special Safety Precautions: Access to overhead Review RWP requirements and surveys prior to overheads	
Isolation Controls:	
Level 1 □ Level 2 □ N/A X	
Labeling Requirements: NONE	
Survey Package Implementation:	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707			
Survey Area: Q	S	Survey Unit. N/A			
	ription: INSIDE OF MODULE E (AREAS ARE POSTED AS FIXED				
	Mınımum Survey/Sampling M	easurement Requirements			
Measurement	Number and Type	Comments			
Surface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1			
Measurements	45 <u>unbiased</u> survey points uniformly distribution throughout the room	ributed SEE NOTE 2 SEE NOTE 3			
	7 biased survey points at the following lo	cations SEE NOTE 4			
	- 5 points around floors adjacent to co contamination areas (where accessible	ontained			
	- 2 points near criticality drain location	ns			
	CEILINGS/WALLS > 2 meters				
	30 <u>biased</u> surveys (15 wall, 15 ceiling) w focus on following areas of room	ith			
	- Walls behind process lines				
	- Ceilings above GB's				
	- Ceilings/walls adjacent to c-cells/ter	nts			
	- Stained or discolored areas				
	- Walls/ceilings near GB's mounted h	ngh on			
	- Areas around pipe or other penetrati	ons			
	EQUIPMENT				
	40 <u>biased</u> survey points on equipment will or more samples from	th one			
	- Each GB "section" extending from t (center) GB lines	he main			
	- Gloveboxes which have visible leak contained spills beneath them	s or			
	- 2 surveys points at each of 5 room of ducts	exhaust			
	- Bag-in/bag out ports to GB lines				
	- 5 survey points on top of overhead r (where locations are accessible throuse reach tools)				
	1	I			

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-00	002	Building 707							
Survey Area: Q		Survey Unit N/A							
	ription. INSIDE OF MODULE E AREAS ARE POSTED AS FIX								
Minimum Survey/Sampling Measurement Requirements									
Measurement	Number and Type		Comments						
Surface Scanning	FLOORS/WALLS < 2 meters 52 1 m ² surface scans shall be taken at location identified for surface activity measurements. Locations found to be		SEE NOTE 1 SEE NOTE 2 SEE NOTE 3						
	DCGL will be noted CEILINGS/WALLS > 2 meters NO EQUIPMENT NONE		SEE NOTE 4						
Media Samples	Total of 4 biased (paint) media sample follows - 1 sample near one of the entrance module - 1 sample around a posted HCA - 1 sample beneath a process GB - 1 sample near a criticality drain		SEE NOTE 5						
Volumetric Samples	NONE			-					
Isotopic Gamma Scans	NONE								

RSFORMS-16 01-8

SURVEY PACKAGE SURVEY/SAMBLING INSTRUCTIONS FORM (conf)

Package ID: 99-0002	Building 707
Survey Area:\Q	Survey Unit N/A
Survey Unit Description: INSIDE OF	MODULE E (ROOM 120) BUILDING 707

Survey Unit Description: INSIDE OF MODULE E (ROOM 120) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alphathen beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media."

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample.
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: Q	Survey Unit N/A
Survey Unit Decomptions DICIDE OF MODUL	EE (DOOM 120) DIJII DING 707

Survey Unit Description: INSIDE OF MODULE E (ROOM 120) BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

SURVEY PACKAGE SURVEY/SAMBLING INSTRUCTIONS FORM/(cont)

Package ID. 99-0002	Building 707
Survey Area: Q	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE I RADIOLOGICAL AREAS ARE POSTED AS FIX	E (ROOM 120) BUILDING 707
RADIOLOGICAL AREAS ARE POSTED AS FIX	ED CONTAMINATION AREAS

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for bota contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected.
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: Q	Survey Unit N/A
Survey Unit Description: INSIDE OF MODULE RADIOLOGICAL AREAS ARE POSTED AS FIX	

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected.
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos.
- 4 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e g, indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0002		Building 707	Building 707				
Survey Area:	Q	Survey Unit N/A	A	<u></u>	1		
Change #	Descriptio	n	Initiator/ Date	PRE			
J	Added page 6A		01 12/2/19	MOE			
			12/2/9	Wille !	0//		
2	Replaced pa 6 to delote	mots to spec. B' man:	Mai/17/00	ALE W			
3	Delated Ref to an Replaced pg 6 to delate Replaced pg 6A m/4	wexed pa	On 0/18/00	AT SE			
4	REPLACED pg 9 w/ pgs	~ ~ ·//	do 4/27/00	EDM	1		
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SURVEY PACKAGE VALIDATION CHECKLIST FORM

	ll l	ıldıng 707				
Survey Area: Q	Su	Survey Unit N/A				
Survey Type: Reconnaissance Level Characteriza	tion Surve	y X Final Status Surv	vey □			
All Documentation Reviewed for Completion		RCT Supervisor	PRE			
Scan Surveys		1	do			
Total Activity Surveys		S	d			
Exposure Rate Surveys		NA	NA			
Removable Surveys		J	do			
Media Samples		all	Eom			
Volumetric Samples		NA	NA			
All Surveys and Samples Accounted For		RCT Supervisor	PRE			
Scan Surveys		λ	d-			
Total Activity Surveys		ì	d-			
Exposure Rate Surveys		NA	NA			
Removable Surveys		1	do			
Media Samples	.,	AD.	Hom			
olumetric Samples		NA	NA			
Comments						
Α						

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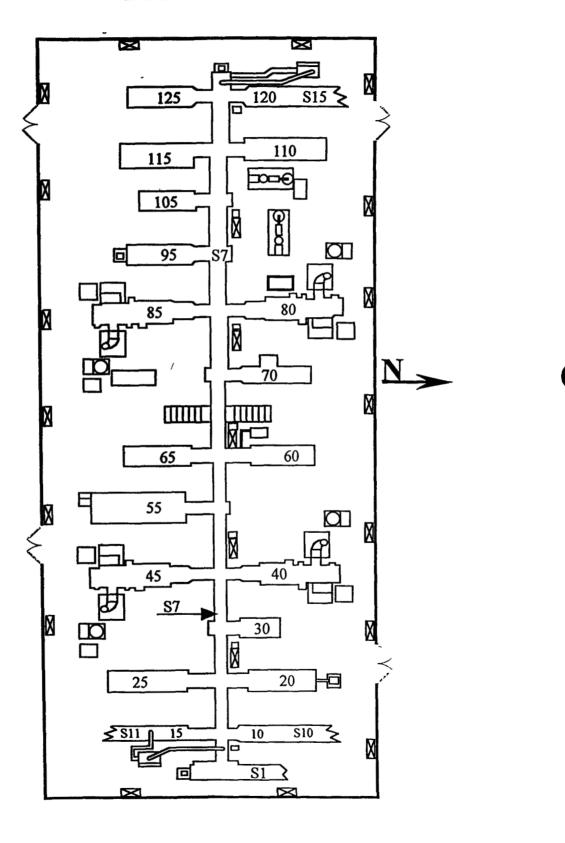
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Bkg Efficiency	Bkg Efficiency	Efficiency	RWP#			
MDA	MDA	MDA				
MDA	MQA	MDA			Tıme	
Mfg	Mfg.	Mfg		****		
Model	Model	Model	RCT		1	,
Serial #	Serial #			rint name	Signature	Emp #
Cal Due	Cal Due	Cal Due			2-8	
Bkg	Bkg	Bkg		,	/	,
Efficiency	Efficiency	Efficiency		rint name	Signature	Emp #
MDA		MDA				
PRL#:Comments						
		SUI	RVEX RESULTS			
REMOVABLE Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	REMOVABLE Beta DPM/100 cm²	Alpha E	RECT REMOVABLE Alpha DPN/100 cm² 26	REMOVABLE Beta DPM/100 cm²	Alpha	RECT Beta //100 cm²
25 Date Reviewed:	R	S Supervision:	50		Signature	/ Emp #

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RADIOLOGICAL SAFETY

EXCESNIFICATION CONTRACTOR

Drawing Showing Survey Points MODULE E



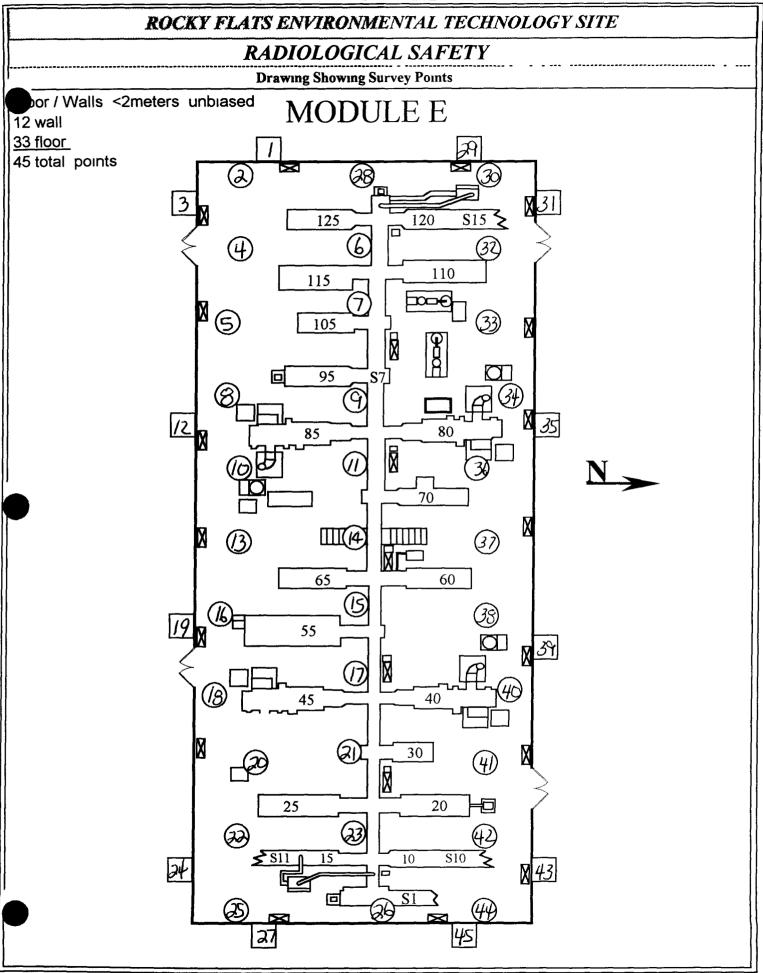
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4.	<u> </u>		0	20	24	19	W	10	7	18
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_6	F		6	4-	0	21	F	0	40	6
7.	F		0	44	36	22.	F	0	-76	78
8	F		0	-96	0	23	F	3	40	12
9.	F		0	16	-6	24	W	0	24	24
10.	F		0	-15	6	25	F	0	4	30
11	F		D	36	17.	26	F	0	-40	18
12	\\/		0	-20	6	27	W	0	20	12
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Date	Reviewed: 3	<u> 10.00</u> RS Su	ıpervis	10						

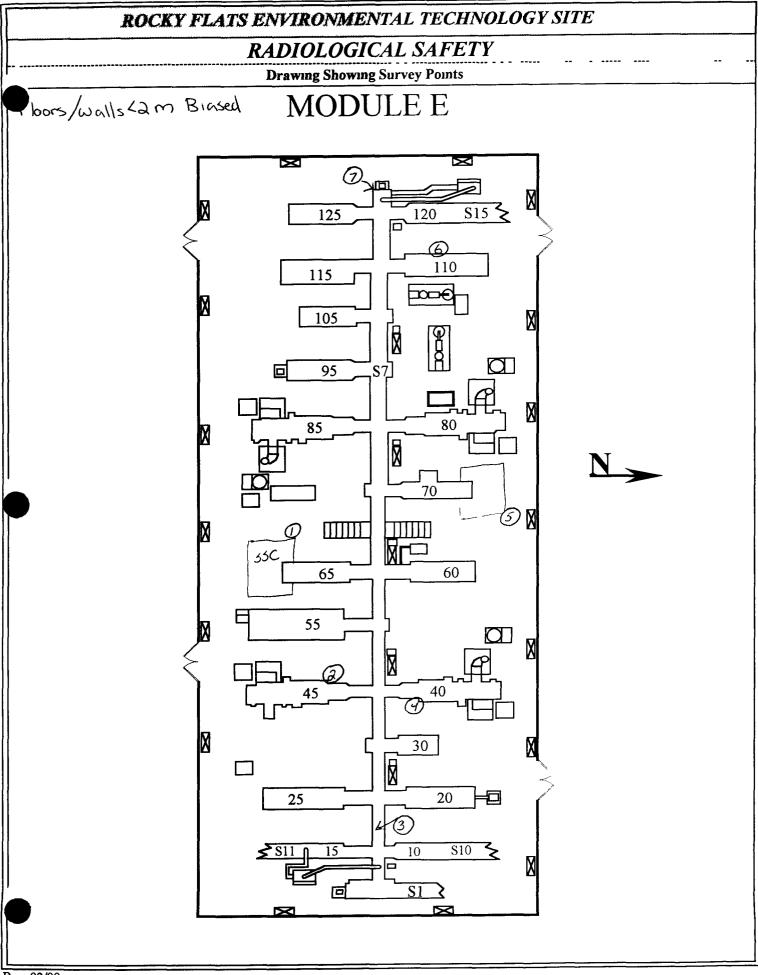
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

1122						Survey	Points			
Sw TI #	ipe	Location\Description (Results in DPM/100cm ²)	Remo Alpha	vable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
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3			3	40	-6	62				
3		F	0	-64	24	63				
3.	Π,	F	0	44	24	64				
3	5	W	0	<u>-40</u>	6	65				
3	6	F	0	-12	18	66				
3	7.		0	-28	30	67				
3.	8	F	3	16	18	68				
3	9 \	W	0	44	0	69				
4	0 /	F	0	16	120	70		<u> </u>		
4	1	E	0	-52	6	71				
4:	2	F	0	56	6	72				
11 <u>4</u>	3	\mathcal{W}	3	-32	6	73	~			
4	4 /	F	0	<i>5</i> 2	42	74	T.			
4:	5	W	0	-56	18	75				<u> </u>
A	5.	END OF SURVEY				76				
4	<u>/</u>					77				
48	3					75				
49	2					79				
50	1					80	\	\		
51	4					81				
52	2					82				
53	3					83				
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57			}	$\overline{}$		87				
58	4			\supset		88				
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	ciency 25%	Efficiency 25%		iciency	\overline{Z}	KCI	Print name / Signatu	re	/ Emp	
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Swipe	Location\Desc	ription	Rem	ovable	Total	Swipe	Location\Description	Rem	ovable	Total
#	(Results in DPM/		Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
1	Floor by	55C (e-65)	0	88	66	16				
2	f crit da		0	32	108	17				
		IN CENEILINE	6	-32	102	18				
4	F Crit dra	1N €-40	0	-24	78	19		ļ		
5	Floor 64	55C (E-70)	0	-16	12	20				
6	f crit dra	11N €-110	3	-12	36	21				
7.	f crit drai	N centerline	0	4	12	22	/			
8	END OF	N centerline Survey				23	N/A			
9		/				24				
10	···					25	/			
11.	· <u> </u>					26				
12		NA				27				
13.						28				
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	al # <u>849</u>	Serial #837	_	rial #_ 3/			tion Module E	Sur	vey Are								
RI	Due <u>4-10-00</u>	Cal Due <u>5-/7-00</u>	-	l Due <u>4</u>		Purpo	ose Reconnaisance Level C	haracı	terizau	ion							
	Q/cpm	Bkg o.2 gpm		g <u>20.</u>		DW	P# <u>00-707 /20</u>	14		1							
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				<u> 201</u>	RVEY I	RESU	LTS										
Swipe	Location\Desc	ription		ovable	Total	Swipe		-	ovable	Total							
#	(Results in DPM/	/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha							
1	E-125 p	10rt 214	0	-8	48	16	E-45	0	-32	78							
2.	E-125 pc	ort 216	3	-28	18	17	CENTERLINE Post	0	24	132							
3	€-125		0	-20	600	18	€-25 port 430	195	0	492							
4	€-115 pc	ort 231	3	12	54	19	6-25 port 432	3	64	132							
	E-115 pc	[0	60	36	20	E-25 tooldrop	0	4	102							
	6-115 po		0	76	42	21	6-15	9	48	102							
7	1	NNect to centerline	27	12	7536	22	5-/ tooldrop	6	-40	54							

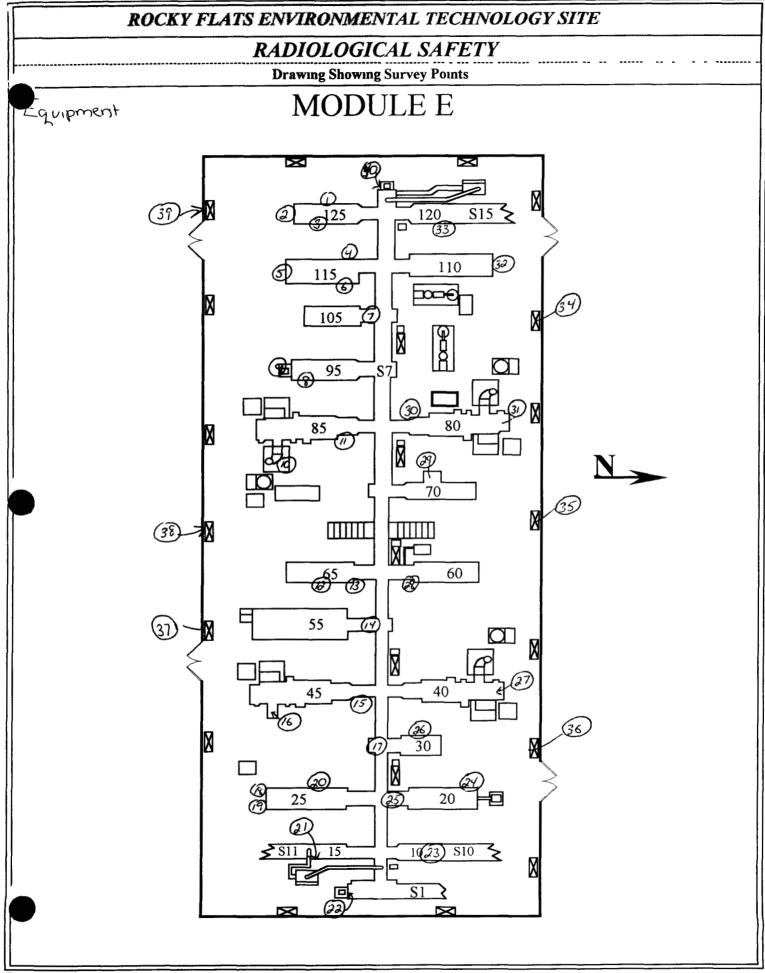
3 76 72 23 16 108 6 E-10 24 42 24 \bigcirc E-95 tooldrop 0 E20 Bay Port 20 138 24 80 C-85 PUMP 0 -/6 25 €-20 connect 486 3 €-85 90 E-30 tooldrop port 336 0 48 66 26 -/6 20 6-40 96 390 tool drop 0 27 56 13. 3 96 66 E-60 E-65 0 -12 28 12 6-70 44 36 E-55 CONNECT \bigcirc 126 \bigcirc 56 29 -12 30 -2<u>8</u> 96 30 E-80 port 411

Date Reviewed. 3-14-00 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

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					wing S	urvey	Points	_ <u> </u>	13	
	Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	vable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha	Nable Beta	Total Alpha
	31	E-80	0	20	36	61			· · · · · · · · · · · · · · · · · · ·	
	32	E-110 Bng Port E-120 port 197 Vent	0	-8	36	62				/
	33	E-120 port 197	12	40	96	63				
	34	Vent	6	32	60	64				
	35	Vent	3	52	108	65			/	
	36	Vent	3	12	390	66				
	37	Vent	18	8	174	67		/		
Ì	38	Vent	3_	0	156	68		/		
	39		0	48	24	69		/		
١	40.	crit drain Pipe End of survey	0	16	48	70				
	41	END OF SURVEY			-/-	71	/			
	42				/	72				
1	43.			/	<u> </u>	73_	N/A			
9	44.			/		74	N/F			
Ì	45			/		75				
	46.		/			76	/			
	47.		/-			77				
	48	7	/			75				
	49	NA				79				
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	51					82				
	52 53.					83				
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(Survey Area Pkg Page 9μ of 9) RS FORMS 07 02-01 ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE INSTRUMENT DATA Contamination Mfg Eberline Survey Type Mfg Eberline Mfg NeTech Building 707 Model Sac-4 Model Sac-4 Model Electra Survey Area (2) Location 170/u/e Serial # 849 Serial # 837 Serial # 1233 Reconnaisance Level Characterization Purpose Cal Due 4-10-00 Cal Due 5-17-00 Cal Due 5-11-00 Bkg 0,1 cpm Bkg oro com Bkg 20 pm RWP# 00-707-1204 Efficiency 20632 Efficiency 33% Efficiency 33% MDA 82 dpm MDA 115 dpm MDA 94 dpm Date 3-8-00 Time 1630 Mfg Eberline Mfg Eberline Mfg \ Model BC-4 Model BC-4 Model ' Serial # 933 Serial # 872 Serial # Cal Due 4-12-00 Cal Due 7-14-00 Cal Due NA Bkg <u>58 cpm</u> Bkg <u>52 =pm</u> Bkg Efficiency 25% Efficiency 25% Efficiency MDA 1160 dom MDA 110.4 dom **MDA** Comments Ceiling / Walls > 2 meters Biased survey points 1 minute pats and swipes See map for locations Counts alpha < 8com electra 3 background below culing tiles **SURVEY RESULTS** Removable Removable Total Total Swipe Swipe Location\Description Location\Description (Results in DPM/100cm²) Beta (Results in DPM/100cm²) Beta Alpha Alpha Alpha Alpha

	 								
1.	wall	0	4	6	16	(e, l,n3	3	48	18
2	wall	0	0	18	17	Cerlars	0	-32	30
3.	Wall	0	8	30	18	Certins	0	36	18
4.	woll	3	60	42	19	Cerling	0	-24	24
5	Wall	0	-16	48	20	Certing	0	-32	24
6	wall	0	-4	12	21	Celler	0	-32	18
7	wall	0	35.2/4	30	22	Cerns	0	-12	12
8	wall	0	12	24	23	Cerlina	0	-8	0
9	wa//	0	-28	6	24	Certing	3	-20	24
10.	wall	0	-8	6	25	Celling	0	32	18
11	vall	3	-36	6		Celling	0	0	30
12	wall	0	-12	12		Ceiling	0	0	30
13	~u//	0	4	12	28	Cerling	3	-4	60
14	well	3	-24	18	29	Centura	3	ンジ	36
15	wall	0	32	6	30	Ces/sona	0	28	6

Date Reviewed: $3 \cdot 14 \cdot 00$ RS Supervision:

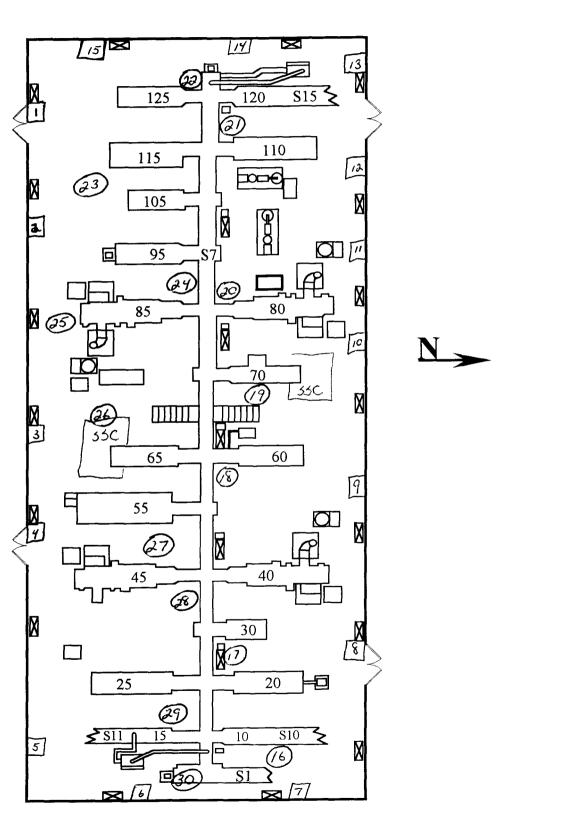
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Ceilings + Walls >2M

MODULE E



SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002		Building 707					
Survey Area: R	· · · · · · · · · · · · · · · · · · ·	Survey Unit N/A					
Initiator/ Date	Release Date	Validation Date	Closure Date				
10/25/19	Af 12/21/49	RM 6/14/00	120m 6/14/00				
//0 /	<i>ll'</i>						
		-					
·							
]						

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	0002	Building 707	Type 3				
Survey Area R		Survey Unit N/A	Area (m ²) 537				
	cription INSIDE OF O POSTING AS HCA N AREAS						
Survey Type			Classification				
RLC Survey X	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
45	42	30	3	0	57		
Building		Туре		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type			Classification				
RLC Survey □	FSS □		Class 1 🗆 Class	2 □ Class 3 □ U	Jnknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type			Classification				
RLC Survey □	FSS □		Class 1 Class:	2 □ Class 3 □ U	Jnknown 🗖		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type			Classification				
RLC Survey □	FSS 🗆		Class I Class:		Jnknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707								
Survey Area: R	Survey Unit N/A								
Survey Unit Description: INSIDE OF MODULE FROOMS 125A, AND 125B DUE TO POSTING AS HCAPOSTED AS FIXED CONTAMINATION AREAS									
Building Information:									
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey 🗆								
Building Type Type 1 Type 2 Type 3 X									
Classification Class 1 □ Class 2 □ Class 3 □ Unknown X									
Contaminants of Concern Plutonium X Uranium X	Other 🗆								
Justification for Classification: N/A									
Special Support Requirements: Ladder, manishinstrumentation may be required for access into	•								
Special Safety Precautions: Access to overhead Review RWP requirements and surveys prior to overheads	· -								
Isolation Controls:									
Level 1 🗆 Level 2 🗖 N/A X									
Labeling Requirements: NONE									
Survey Package Implementation:									
	- 1- 11 ·								

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0	002	Building 707				
Survey Area. R	1	Survey Unit N/A				
ROOMS 125A, ANI		NCLUDING ROOMS 125, 126, 127 EXCLUDES BUILDING 707 RADIOLOGICAL AREAS ARE				
	Mınımum Survey/Sampling M	leasurement Requirements				
Measurement	Number and Type	Comments				
Surface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1				
Measurements	45 <u>unbiased</u> survey points uniformly distribut rooms 125, 126, 127 as follows 19 total in ro 7 total in room 127, 19 total in room 125					
	12 <u>biased</u> survey points at the following locat	ions SEE NOTE 4				
	- 2 points around floors adjacent to entrar rooms 125A, 125 B (where accessible)	nces to				
	- 2 points near criticality drain locations					
	- 3 points within walled area of room 125 staging/prep area)	(drum				
	- 2 points near hood/b-box of room 126 (corner)	SE				
	- 3 points behind equipment where floor present	staining is				
	CEILINGS/WALLS > 2 meters					
	30 <u>biased</u> surveys (divided evenly between and ceiling when possible) with focus or following areas of rooms					
	- Walls behind process lines					
	- Ceilings above hoods/B-boxes/hood	ds				
	- Stained or discolored areas (specific on stained areas within room 127)	c focus				
	- Areas around pipe or other penetrat	ions				
	EQUIPMENT					
	30 biased survey points on equipment w or more samples from	nth one				
	- Hoods/B-boxes which have visible contained spills beneath them	leaks or				
	- 2 surveys points at each of 5 room ducts	exhaust				
	- Equipment (in/out of service) in roo	om 127				
	- 5 survey points on top of overhead (where locations are accessible throreach tools) – focus on OH piping i 127	piping rugh				

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area [•] R	Survey Unit N/A

Survey Unit Description: INSIDE OF MODULE F, INCLUDING ROOMS 125, 126, 127 EXCLUDES ROOMS 125A, AND 125B DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Minimum Survey/Sampling Measurement Requirements			
Measurement	Number and Type	Comments	
Surface Scanning	FLOORS/WALLS < 2 meters 57 1 m² surface scans shall be taken at each location identified for surface activity measurements Locations found to be above the DCGL will be noted CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4	
Media Samples	Total of 3 biased (paint) media samples taken as follows - 1 sample near one of the entrances to the module - 1 sample around a criticality drain - 1 sample behind equipment in room 127 along W wall (stained areas)	SEE NOTE 5	
Volumetric Samples	NONE		
Isotopic Gamma Scans	NONE		

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building: 707
Survey Area: R	Survey Unit N/A

Survey Unit Description: INSIDE OF MODULE F, INCLUDING ROOMS 125, 126, 127 EXCLUDES ROOMS 125A, AND 125B DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for algha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is tree of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecing the media sample
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures.
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: R	Survey Unit N/A

Survey Unit Description: INSIDE OF MODULE F, INCLUDING ROOMS 125, 126, 127 EXCLUDES ROOMS 125A, AND 125B DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

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- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
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- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

Package ID: 99-0002	Building 707
Survey Area: R	Survey Unit N/A

Survey Unit Description: INSIDE OF MODULE F, INCLUDING ROOMS 125, 126, 127 EXCLUDES ROOMS 125A, AND 125B DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area
- 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radion progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building. 707
Survey Area: R	Survey Unit N/A

Survey Unit Description: INSIDE OF MODULE F, INCLUDING ROOMS 125, 126, 127 EXCLUDES ROOMS 125A, AND 125B DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
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- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID	9-0002	Building 707			
Survey Area	R	Survey Unit N/A			
Change #	Description		Initiator/ Date	PRE	
1	Added page CA		1 12/2/19	ME	Marko
2	Deleted pet to dire	et/scan & meas.	12/2/99	ARC	J01/18/
2	Replaced pg 6 to	b dekte B' pets	101/18/00	MOS	
3		severed pa	On 01/18/00	MBZ	
4	REPLACED PG 9 W/ PGS	9-95	D 5/4/00	III -	
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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Survey Type: Reconnaissance Level Characterization Survey All Documentation Reviewed for Completion Scan Surveys Total Activity Surveys Exposure Rate Surveys Removable Surveys Media Samples Volumetric Samples All Surveys and Samples Accounted For Scan Surveys	Yey Unit N/A X Final Status Surv RCT Supervisor A A A A A A A A A A A A A A A A A A	PRE D- D- NA D- NA D- DMM
All Documentation Reviewed for Completion Scan Surveys Total Activity Surveys Exposure Rate Surveys Removable Surveys Media Samples Volumetric Samples All Surveys and Samples Accounted For Scan Surveys	RCT Supervisor A NA S D D D D D D D D D D D D	PRE dr dr NA dr
Scan Surveys Total Activity Surveys Exposure Rate Surveys Removable Surveys Media Samples Volumetric Samples All Surveys and Samples Accounted For Scan Surveys	Supervisor A NA S S S S S S S S S S S S S	do do NA do
Total Activity Surveys Exposure Rate Surveys Removable Surveys Media Samples Volumetric Samples All Surveys and Samples Accounted For Scan Surveys	S BD	NA d-
Exposure Rate Surveys Removable Surveys Media Samples Volumetric Samples All Surveys and Samples Accounted For Scan Surveys	S BD	NA d-
Removable Surveys Media Samples Volumetric Samples All Surveys and Samples Accounted For Scan Surveys	S BD	d
Media Samples Volumetric Samples All Surveys and Samples Accounted For Scan Surveys	8 881	d- som
Volumetric Samples All Surveys and Samples Accounted For Scan Surveys	00) NA	DOM
All Surveys and Samples Accounted For Scan Surveys	۸۱.4	1 '
Scan Surveys		NA
	RCT Supervisor	PRE
		d
Total Activity Surveys	ĺ	do-
Exposure Rate Surveys	NA	NA
Removable Surveys	1	do
Media Samples	30 S	Bons
Volumetric Samples	NA	NA
Comments	<u> </u>	

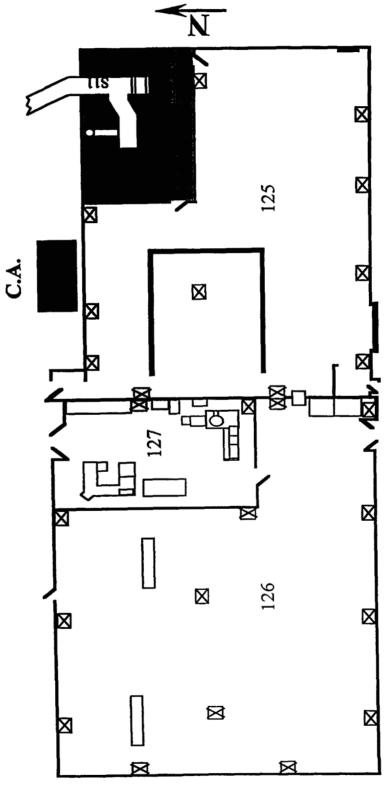
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\ T	NSTRUMENT	DATA	va va va va va va va va va va va va va	and the distriction of the second second second second second second second second second second second second	ALL COMMENTS OF MARKET AND ADDRESS OF THE PARTY OF THE PA					
Mfg	Mfg.			Survey Tv	me:					
Model	Model			Building						
Serial #	Serial #		¥	Building. Location						
Cal Due	Cal Due		e	Purpose _						
Bkg.	Bkg.									
Efficiency	Efficiency		ncy	RWP#						
MDA	MDA	MDA								
				Date		Time				
Mfg	Mfg	Mfg				-				
Model	Model			RCT		/				
Serial #	Serial *		#]	Print name	Signatu	re Emp#			
Cal Due	Cal Due		e							
Bkg	Bkg.	Bkg		RCT		<u>/</u>				
Efficiency	Efficiency	Efficie	ncy]	Print name	Signatu	re Emp#			
MDA	MDA	MDA_								
PRL#:Comments										
			-\							
			SURVEY R							
REMOVABLE Alpha DPM/100 cm ² 1	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²			
2				27						
4				29						
5				30						
6				31	\					
7	**********			32	\					
8				33	/	· · · · · · · · · · · · · · · · · · ·				
10				35						
11				36						
12				37						
13				38	\	\ 				
14 15				40		\ 				
16				41						
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23				48						
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25				50						
Date Reviewed:	R	RS Supervision		int Name		Stonature	/ Fmn #			

RADIOLOGICAL SAFETY

WILDRICAL TURCEDNESS OCH STER

Drawing Showing Survey Points





Rev. 05/98

IN	ISTRUMENT DATA	1	
Mfg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination
Model Sac-4	Model Sac-4	Model Electra	Building 707
Serial # <u>849</u>	Serial # 837	Serial #_3260_	Location F-mod Survey Area R
Cal Due <u>4-10-∞</u>	Cal Due <u>5-17-00</u>	Cal Due 7-17-00	Purpose Reconnaisance Level Characterization
Bkg Oil CPM	Bkg Oy cpm	Bkg O.O cpm	
Efficiency 33%	Efficiency 33%	Efficiency 1919%	RWP# 00 - 707 - 1204
MDA <u>11.5 Dem</u>	MDA 14.8 DPm	MDA 94 DPM	Date 3-6-00 Time 1500
Mfg Eberline	Mfg Eberline	Mfg	
H	Model BC-4		
	Serial # 833	-,,,	
4K — — — — — — — — — — — — — — — — — — —	Cal Due 7-14-00	Cal Due / /	
Bkg <u>47 cpm</u>	Bkg 44 CPM	Bkg	RCT
	Efficiency 25%	Efficiency	Print name / Signature / Emp #
MDA 105.5 DPM	4 MDA 1624 DPM	MĐA	
Comments Floor	/ Walls < 2 meters	Unbiased survey	points
1 m ² scans, 1 m	nnute pats and swipe	es See map for lo	ocations
· · · · · · · · · · · · · · · · · · ·	yd Counts el		
		STIDVEV I	DECIT TC

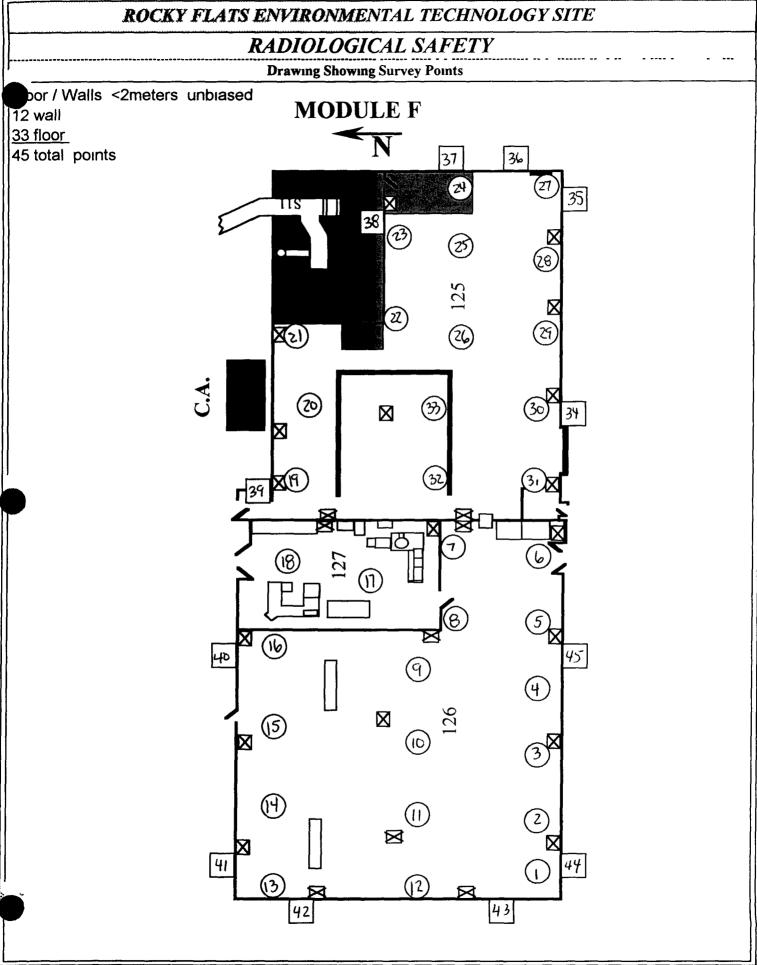
SURVEY RESULTS

Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	F	0	20	12	16	F	0	60	24
2	F	0	20	42	17	F	0	44	48
3.	F	0	56	6	18	F	9	-40	24
4	F	0	40	36	19	F	O	-50	<i>3</i> 0
5	F	0	12	42	20	F	0	80	72
6	F	0	-40	30	21	F	3	4	36
7	7)	0	48	24	22	F	0	44	186
8	F	3	36	48	23	F	0	4	72
9	F	3	52	54	24	F	\circ	48	18
10	-	0	20	30	25	F	0	24	48
11	F	3	-4	12	26	F	0	60	36
12	F	0	-4	12	27	F	J	12	24
13	F	0	-20	18	28	F	0	-12	3.
14.	F	3	24	36	29	F	0	68	102
15	P	0	20	84	30	F	3	48	48

Date Reviewed: 3-21 00 RS Supervision:

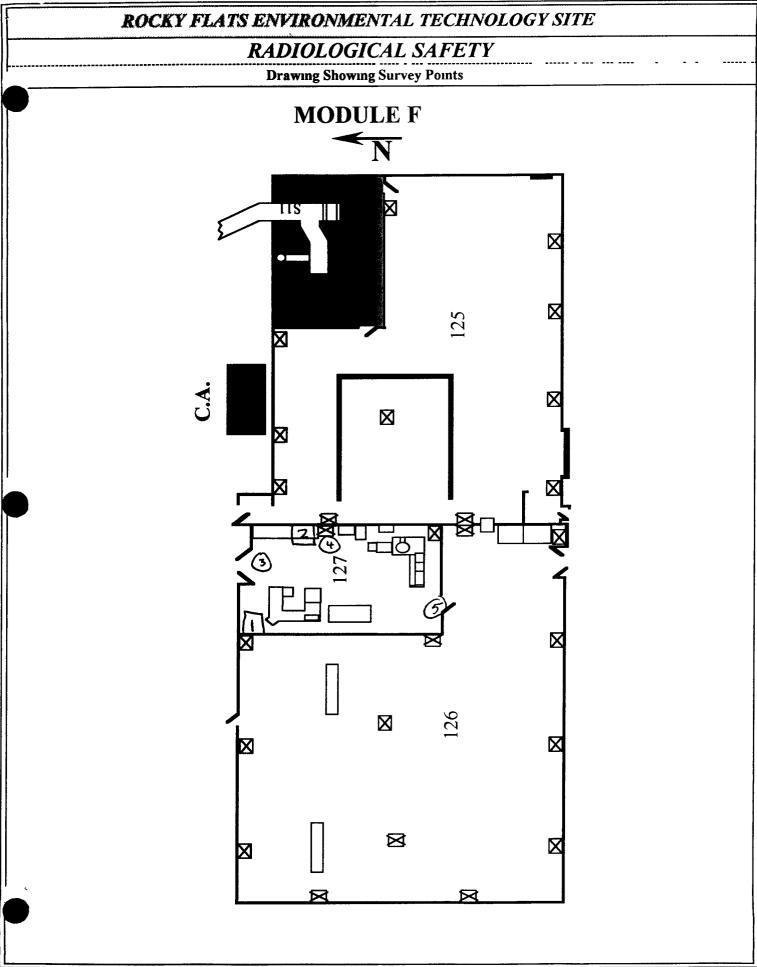
RADIOLOGICAL SAFETY

							SAFETY			
							Points	T 5	,,-	
	Swipe #	Location\Description (Results in DPM/100cm ²)	Reme Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha	ovable Beta	Total Alpha
	31	F	0	4	12	61				/
	32	F	0	Ò	48	62				
	33	F	0	4	72	63				/
	34	W > 2	0	12	48	64			/	
l	35	W 72	0	48	18	65				
	36	W>Z	3	-80	18	66				
	37	W >Z	0	24	0	67				
	38	W > 2 W > 2 W > 2 W > 2	15	34	24	68				
	39	W >2	0	0	48	69				
	40	W>2	0	88	24	70		_		
	41.		0	40	30	71				
	42	W>2	0	24	12	72				
 	43.	W>2	0	20	18	73				
	44.	,	0	0	12	74				
	45.	W>2	0	48	42	75	NA			
	46	END OF SURVEY			\angle	76				
	47			/		77				
	<u>48.</u>			\mathcal{A}		75	/			
	49			-		79				
	<u>50.</u>					80				
	51	 	/			81				
	52	/				82				
	53	A/A				83				
$\ $	54	<i>9</i> 4				84				
	55					85				
	56.	/				86				
 	<u>57.</u>					87				
	<u>\$8</u>					88			-	
#	59.	/				89				
	60.	/			[90				



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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE											
INSTRUMENT DA				-1	Contominate	0.72					
fg Eberline Mfg Eberline		g NeT			vey Type Contamination 707	OII					
Odel Sac-4 Model Sac-4 Serial # 846 Serial # 1054		del_Elec 1al #3		Build	tion F-mod	Surve	ey Area	ı R			
Cal Due <u>8-/5-00</u> Cal Due <u>8-23-26</u>				1	- Y						
Bkg Oil com Bkg ois com		g <u>z s</u>									
Efficiency 33% Efficiency 33%	Eff	iciency_	2101%	RW	P# 00-707-1209	4					
MDA 11,502- MDA 129 DP1	<u>∽</u> MI)A <u>94</u>	DPn	Date	<u>5-2-00</u> Time	1300	٥				
Mfg Eberline Mfg Eberline		g <u>1</u>	<u>A</u>								
Model BC-4 Model BC-4		del									
Serial # 959 Serial # 833 Cal Due 7-19-00 Cal Due 7-19-0	-	ıal # Due	 								
Bkg 35 cpm Bkg 43 cem	_	g									
Efficiency 25% Efficiency 25%		iciency_		RCT	Print name / Signa	iture	/ Emp	#			
MDA 92502m MDA 1013 pr	_				Time name , Digita		. =:::p				
Comments Floor / Walls < 2 meters Unbiased survey points											
1 m ² scans, 1 minute pats and sw	1 m ² scans, 1 minute pats and swipes See map for locations										
Additional Point in Rm 127 Per instructions											
SURVEY RESULTS											
Swipe Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	ovable Beta	Total Alpha			
1 wall	0	28	18	16	NA						
2 Wall	0	16	36	17							
3 Floor	0	4	46	18							
4 Floor	0	40	24	19							
5 Floor	0	32	24	20							
6 END OF SURVEY	ļ		NA	21							
7			,	22							
8	/			23							
9	<u> </u>			24		\downarrow					
10				25		1					
11				26		4					
12				27			\downarrow				
13				28			-				
14				29				1			
5 NA				30	*			NA			
Date Reviewed. 5-2-00 RS S	upervisi	on									

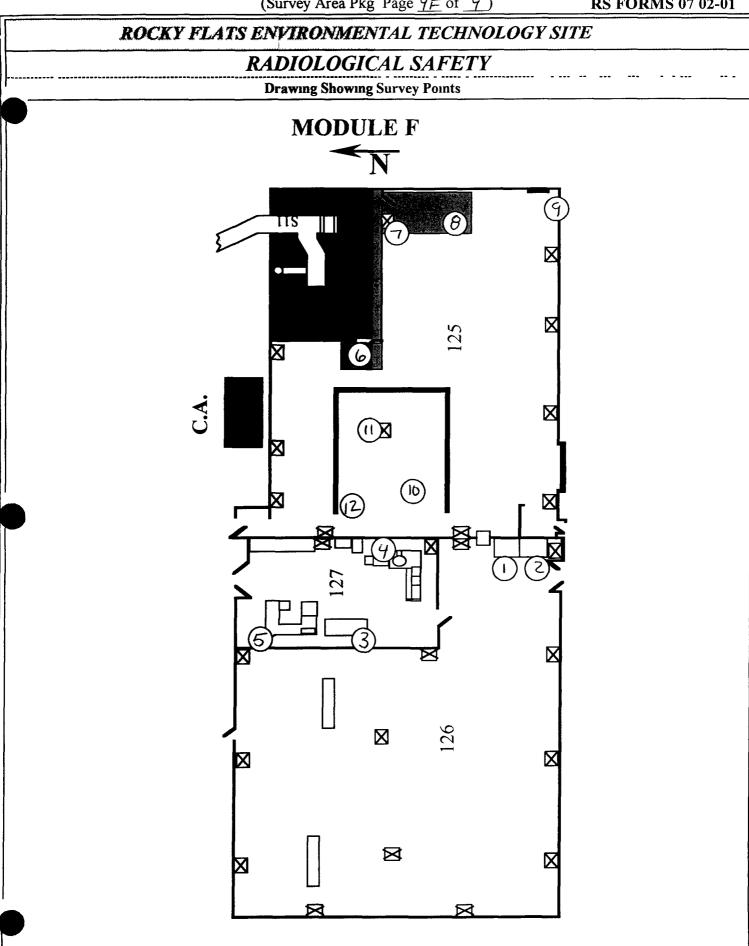


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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE **INSTRUMENT DATA** Contamination Survey Type _ Mfg Eberline Mfg Eberline Mfg NeTech Model Sac-4 Building 707 Model Sac-4 Model Electra Location F-mod Survey Area ? Serial # 849 Serial # 837 Serial # 1233 Reconnaisance Level Characterization Purpose Cal Due <u>4-10-00</u> Cal Due 5-17-00 Cal Due 5-11-00 Bkg O.Ocpm Bkg O3 cpm Bkg 0, 2-0m RWP#__00-707-1204 Efficiency 33% Efficiency 20.63% Efficiency 33% MDA 94 DPM MDA 1290Pm MDA 13,5 0Pm Mfg Eberline Mfg Eberline Mfg Model BC-4 Model BC-4 Model Serial # 872 Serial # 833 Serial # Cal Due 4-12-00 Cal Due 7-14-00 Cal Due Bkg <u>52 cpm</u> Bkg <u>50 cpm</u> Bkg / RCT Efficiency 25% Efficiency 25% Efficiency Print name / Signature / Emp # MDA 110,4 Of MDA 108,4 MDA Comments Floor / Walls < 2 meters Brased survey points 1 m² scans, 1 minute pats and swipes See map for locations @ Contained Contamination 600 DPM Removeable 3000 DPM Fixed 3 alpha blad counts electra < 8cpm (0,0,1) **SURVEY RESULTS** Removable Total Removable Total Swipe Swipe Location\Description Location\Description Alpha Beta (Results in DPM/100cm²) Alpha Beta (Results in DPM/100cm²) Alpha Alpha # 40 48 B-BOX 16 48 /2 34 B-Box 17 3 Piping 36 18 0 32 30 19 -12 24 20 32 48 6 21 3 -12 78 7 22 0 24 F 312 8 23 24 36 9 24 48 \circ 25 10 54 40 11. 26 16 36 12. 27 13. END OF SURVEY 28 14 29 15 30

Date Reviewed: 3 21-00 RS Supervisio



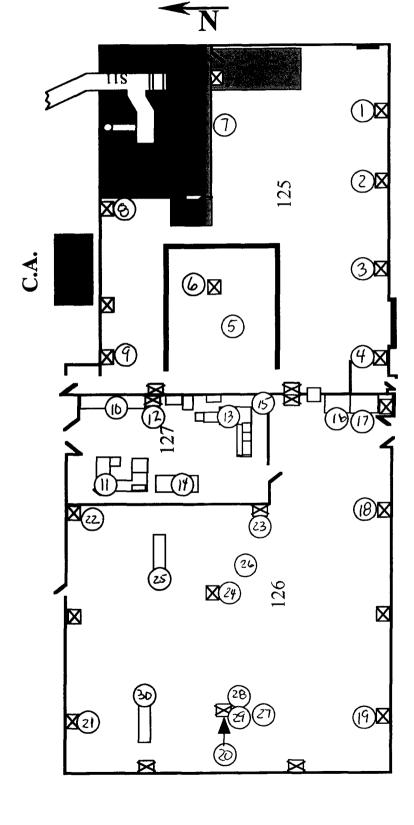
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1		ROCKY FLA	TS E	NVIR	ONM	ENT	AL TECHNOLOGY SIT	E			
		STRUMENT DA	TA			• ,					
_	Eberline	Mfg Eberline		fg Ne		-	vey Type Contaminatio	n			
	lel Sac-4	Model Sac-4		odel <u>Ele</u>			ding				
	al # 849	Serial # 837		rial # <u>3</u>			tion F-Mod ose Reconnaisance Level		rvey A		
	Due <u>4-10-00</u>	Cal Due 5-17-00 Bkg o 5 cpm		l Due <u>7</u> g <u>10</u>		Purp	ose <u>Reconnaisance Level</u>	Спагас	terizai	1011	
	ciency 33%	Efficiency 33%	_	ficiency		RW	P#00-707-120	94			
	A <u>8.2 OPm</u>	MDA 15,6 0Pr		DA 94		ا ع					
11					_	ı	e <u>3-10-00</u> Time _	11	00		
Mfg		Mfg Eberline		g <u>Ne</u>							
	lelBC-4	Model BC-4		odel_ <i>E1</i>							
18	al # 872	Serial # 833	_	rıal # <u> </u>							
	61 cpm	Cal Due 7-14-00 Bkg 52cpm	-	Due <u>5</u>							
-	ciency 25%	Efficiency 25%		g <u>1.0</u>		RCT					
							Print name / Signatu	re	/ Emp	p #	
MDA 118.6 OPm MDA 110.4 OPm MDA 94 OPm Comments Equipment Biased survey points											
Comments Equipment Blased survey points 1 minute pats and swipes See map for locations											
I minute pats and swipes See map for locations O - Fixed 2200 DPm under label - Contained											
3 alpha bland counts electra 28cpm (2,2,4)											
	SURVEY RESULTS										
Swipe	Location\Desc	rantion	Ren	ovable	Total	C	Landard	Rem	ovable	Total	
# #	(Results in DPM/	/100cm ²)	Alpha	Beta	Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha	Beta	Alpha	
1	Exhaust		3	-44	114	16	B-Box	9	16	24	
2	Exhaust		۵	-8	24	17	B-Box	3	-32	114	
3	Exhaust		3	-16	156	18	Exhaust	3	Zo	96	
4			٥	-32	6	19	Exhaust	3	-12	72	
5	Flect Bo	× overhead	0	-16	18	20	Exhaust	9	16	960	
6	Exhaust	overhead	18	40	354	21	Exhaust	6	-20	150	
7	Elect Bo	* overhead	6	-20	18	22	Exhaust	9	4	60	
8	Exhaust		3	28	96	23	Exhaust	6	36	120	
9	Exhaust		0	40	258	24	Exhaust	6	0	ماما	
10	Work ben	ch	3	36	24	25	Storage	0	-36	72	
11			0	O	36	26	Elect Box overhead	3	40	24	
12	Exhaust		12	8	378	27	Elect Box overhead	9	-12	18	
13	Equipmen		6	-16	30	28	Duct overhead	15	4	42	
14	Equ pmen	i	3	-12	6	29	Duct overhead	0	36	30	
5	Exhaust		3	48	510	30	Starage	6	8	54	

RADIOLOGICAL SAFETY

Drawing Showing Survey Points





IN	STRUMENT DATA	1	
Mfg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination
Model Sac-4	Model Sac-4	Model Electra	Building 707
Serial # 849	Serial # 837	Serial #_1233	Location F- MOD Survey Area K
Cal Due 4-10-00	Cal Due <u>5-17-00</u>	Cal Due <u>5 11-00</u>	Purpose Reconnaisance Level Characterization
Bkg O.b cpm	Bkg O4 CPm	Bkg 10cpm	20 707-1704
Efficiency 33%	Efficiency 33%	Efficiency 20 63%	RWP# 00-707-1204
MDA 16.3 DYM	MDA 148 DPM	MDA 94 DPM	Date 3-16-00 Time/500
146. FI 1	1.4C 71 1	MC	Date Time/SCO
Mfg Eberline	Mfg Eberline	Mfg	
Model <u>BC-4</u>	Model BC-4	Model	
Serial # 872	Serial # <u>833</u>	Serial # N/A	
Cal Due 4-12-00	Cal Due 7-14 00	Cal Due	
Bkg <u>56 cpm</u>	Bkg 50CPn	Bkg /	RCT
Efficiency 25%	Efficiency 25%	Efficiency	Print name / Signature / Emp #
MDA 1141 ppm	MDA 108.4 DPm	M2OA	
Comments Ceilir	ng / Walls > 2 meter	s Brased survey	points
1 minute pats ar	nd swipes See ma	p for locations	
3 alpha blad		electra 28 cpr	n (1,1,1)
0	7		

SURVEY RESULTS

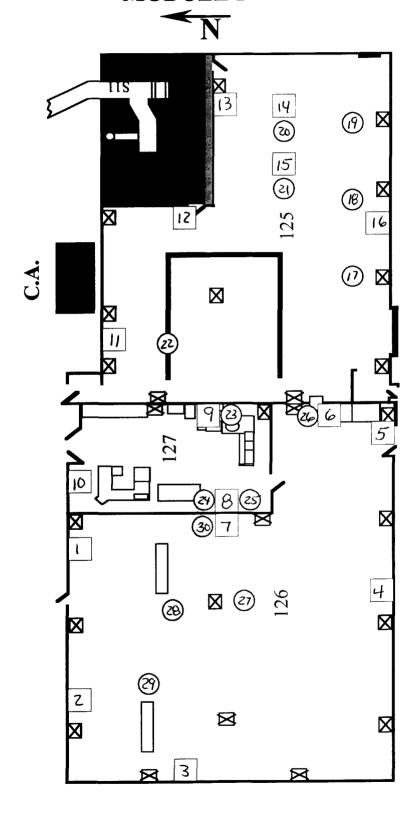
Swipe #	Location\Description (Results in DPM/100cm ²)	Remo	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1.	W >Z	ی	52	36	16	W > Z	3	40	30
2	W > Z	3	76	12	17	С	6	64	12
3.	W > Z	0	-8	42	18	C	6	60	24
4	W > Z	0	4	30	19	C	0	-12	12
5	w >2	3	35	12	20	C	0	-4	30
6	w >2	0	28	36	21	С	0	16	24
7.	w >2	0	-24	24	22	C	3	4	36
8	W > 2	0	-28	36	23	С	0	48	24
9	W > Z	3	4	30	24	С	0	16	12
10	w > 2	6	24	30	25	C	3	12	36
11	M >2	3	12	18	26	C	3	\mathfrak{D}	30
12	w > 2	3	-40	6	27	C	S	40	36
13	W >2	0	-32	12	28	C	3	160	36
14	W >2	0	20	18	29	C	ð	44	30
15	W >2	3	20	12	30	С	\circ	20	24

Date Reviewed: 3 21 00 RS Supervision:

RADIOLOGICAL SAFETY

Drawing Showing Survey Points





SURVEY PACKAGE TRACKING FORM

Package ID· 99-0002 Survey Area: S		Building: 707 Survey Unit N/A		
J 10/25/19	9/ 12/21/99	EDM 6/14/00	150M 6/14/00	
 				
			-	
				
			-	

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707			
Survey Area: S	Survey Unit· N/A			
Survey Unit Description: INSIDE OF MODULE G INCLUDING ROOMS 107, 187, 186, 130, 130A, 130B, 131, 132, 132A, 133, AND 133A EXCLUDES ROOM 131A DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS				
Building Information:				
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey □			
Building Type Type 1 🗆 Type 2 🗀 Type 3 X				
Classification Class 1 □ Class 2 □ Class 3 □ Un	known X			
Contaminants of Concern Plutonium X Uranium X	Other			
Justification for Classification: N/A				
Special Support Requirements: Ladder, manli instrumentation may be required for access into	· · · · · · · · · · · · · · · · · · ·			
Special Safety Precautions: Access to overhead Review RWP requirements and surveys prior to overheads	• •			
Isolation Controls:				
Level 1 □ Level 2 □ N/A X				
Labeling Requirements: NONE				
Survey Package Implementation:				
	N ALL			

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002 Building 707		Type 3			
Survey Area S Survey Unit N/A		\	Area (m²) 634		
Survey Unit Description INSIDE OF MODULE G INCLU 132A, 133, AND 133A EXCLUDES ROOM 131A DUE TO I AREAS ARE POSTED AS FIXED CONTAMINATION ARE		POSTING AS HCA BUILDING 707 RADIOLOGICAL			
Survey Type			Classification		
RLC Survey X	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown X
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
92	45	40	3	0	102
Building		Туре		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Desc	cription			-	
Survey Type			Classification		
RLC Survey □	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown 🗆
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building Type					
Building		Туре	_	Survey Area	
Building Survey Unit		Туре	Area (m²)	Survey Area	
	cription	Туре	Area (m²)	Survey Area	
Survey Unit	cription	Туре	Area (m ²) Classification	Survey Area	
Survey Unit Description Survey Type RLC Survey	FSS 🗆				Jnknown □
Survey Unit Survey Unit Description Survey Type		Type Equipment Surface Activity Measurements	Classification		Jnknown □ Surface Activity Scans
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Bussed Surface Activity	Equipment Surface Activity	Classification Class 1	2 □ Class 3 □ U	Surface Activity
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Bussed Surface Activity	Equipment Surface Activity	Classification Class 1	2 □ Class 3 □ U	Surface Activity
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements	FSS Bussed Surface Activity	Equipment Surface Activity Measurements	Classification Class 1	2 □ Class 3 □ U Volumetric Samples	Surface Activity
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building	FSS Bussed Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 □ Class Media Samples	2 □ Class 3 □ U Volumetric Samples	Surface Activity
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit	FSS Bussed Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 □ Class Media Samples	2 □ Class 3 □ U Volumetric Samples	Surface Activity
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description	FSS Bussed Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples Area (m²)	2 Class 3 U Volumetric Samples Survey Area	Surface Activity
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples Area (m²)	2 Class 3 U Volumetric Samples Survey Area	Surface Activity Scans

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002 Building 707		Type 3			
Survey Area S Survey Unit N/A		1	Area (m ²) 634		
Survey Unit Description INSIDE OF MODULE G INCLU 132A, 133, AND 133A EXCLUDES ROOM 131A DUE TO AREAS ARE POSTED AS FIXED CONTAMINATION ARE			POSTING AS HCA BUILDING 707 RADIOLOGICAL		
Survey Type	\		Classification	<u> </u>	
RLC Survey X	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown X
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
185	108	40	3	0	192
Building		Туре.		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Desc	cription				
Survey Type			Classification		
RLC Survey □	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown 🗆
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
		7			
Building		Туре.		Survey Area	
Building Survey Unit		Type.	Area (m²)	Survey Area	
	eription	Type.	Axea (m²)	Survey Area	
Survey Unit	eription	Type.	Akea (m²) Classification	Survey Area	
Survey Unit Survey Unit Desc Survey Type RLC Survey □	FSS 🗆		Classification Class 1	2 □ Class 3 □ U	Jnknown □
Survey Unit Survey Unit Desc	·	Equipment Surface Activity Measurements	Classification		Jnknown □ Surface Activity Scans
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface Activity	Classification Class 1	2 □ Class 3 □ U	Surface Activity
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface Activity	Classification Class 1	2 □ Class 3 □ U	Surface Activity
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements	FSS Biased Surface Activity	Equipment Surface Activity Measurements	Classification Class 1	2 Class 3 U Volumetric Samples	Surface Activity
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 □ Class Media Samples	2 Class 3 U Volumetric Samples	Surface Activity
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 □ Class Media Samples	2 Class 3 U Volumetric Samples	Surface Activity
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1	2 Class 3 U Volumetric Samples Survey Area	Surface Activity
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description Survey Unit Description	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1	2 Class 3 U Volumetric Samples Survey Area	Surface Activity Scans

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Package ID: 99-0002	Building 707
Survey Area. S	Survey Unit N/A

Survey Unit Description • INSIDE OF MODULE G INCLUDING ROOMS 107, 187, 186, 130, 130A, 130B, 131, 132, 132A, 133, AND 133A EXCLUDES ROOM 131A DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Minimum Survey/Sampling Measurement Requirements				
Measurement	Number and Type	Comments		
irface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1		
easurements	92 <u>unbiased</u> survey points uniformly distributed throughout the rooms in the module as follows	SEE NOTE 2		
	- Rooms 107, 187 (1 pt on 2 different walls, 2 pts per floor per room)	SEE NOTE 3 SEE NOTE 4		
	- Rooms 132, 132A, 133, 133A, 130B, 131, 186, 130A (1 pt per wall, 4 per floor per room)			
	- Room 130 (3 pts per wall, 8 per floor)	}		
	10 biased survey points at the following locations			
	- points near criticality drain locations			
	- points near fixed equipment/items labeled as internally contaminated			
	- potentially contaminated locations as determined by RCT based on past history/use/judgement			
	CEILINGS/WALLS > 2 meters			
	35 biased surveys as follows			
	- Walls behind process lines/fixed process equipment			
	- Ceilings above GB's/B-Boxes/Hoods			
	- Ceilings/walls adjacent to c-cells/tents			
	- Stained or discolored areas			
	- Walls/ceilings near GB's mounted high on walls			
	- Areas around pipe or other penetrations			

PAGE SUPERCEDED & 5-4-00 (CHANGE 6) RSFORMS-16.01-8

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002 B		Building 707	
Survey Area: S		Survey Unit N/A	
132A, 133, AND 133A		UDING ROOMS 107, 187, 186, 130, 130A, 130B, 131, 132, STING AS HCA BUILDING 707 RADIOLOGICAL	
	Mınımum Survey/Sampling M	easurement Requirements	
Measurement	Number and Type	Comments	
Surface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1	
Measurements	185 <u>univased</u> survey points uniformly dis throughout the rooms in the module as fo	llows	
	- Rooms 107, 187, 186, 131 (2 per wa	1 SEE NOTE 3	
	- Rooms 130, 130A, 130B (3 per wall floor)	, 7 per	
	- Rooms 132, 132A, 133, 133A (3 per per floor)	wall, 5	
	7 biased survey points at the following lo	cations	
	- 2 points near criticality drain location	ns	
	- 5 points near fixed equipment items as internally contaminated	labeled	
	CEILINGS/WALLS > 2 meters		
	101 biased surveys as follows		
	- Rooms 107, 187, 186, 131 (1 per wa ceiling)	II, 1 per	
	- Rooms 130, 130A, 130B (2 per wall ceiling)	, 2 per	
	- Rooms 132, 132A, 133, 133A (2 per per ceiling)	wall, 2	
	- Walls behind process lines/fixed pro equipment	cess	
	- Ceilings above GB's/B-Boxes/Hood		
	- Ceilings/walls adjacent to c-cells/ten	its	
	Stained or discolored areas Walls/ceilings near GB's mounted h	rah on	
	- walls walls	igh on	
	- Areas around pipe or other penetration	ons	

Package ID. 99-0002	Building 707
Survey Area: S	Survey Unit N/A
C	CV LIDDIG DOOMS 107 107 107 120 120 120 120 121 122

Survey Unit Description: INSIDE OF MODULE G INCLUDING ROOMS 107, 187, 186, 130, 130A, 130B, 131, 132, 132A, 133, AND 133A EXCLUDES ROOM 131A DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

	Minimum Survey/Sampling Measure	ment Requirements
Measurement	Number and Type	Comments
Surface Activity Measurements (continued)	EQUIPMENT 40 biased survey points on equipment with one or more samples from - Gloveboxes/Hoods/B-Boxes which have visible leaks or contained spills beneath them - 2 surveys points at each of 5 room exhaust ducts - 5 survey points on top of overhead piping (where locations are accessible through reach tools)	
Surface Scanning	FLOORS/WALLS < 2 meters 102 1 m ² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted. CEILINGS/WALLS > 2 meters. NONE. EQUIPMENT. NONE.	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 3 biased (paint) media samples taken as follows - 1 sample near one of the entrances to the module - 1 sample near contaminated equipment - 1 sample near a criticality drain	SEE NOTE 5
Volumetric Samples	NONE	
sotopic Gamma Scans	NONE	

Package ID · 99-0	002	Building 707	
Survey Area: S		Survey Unit N/A	
132A, 133, AND 133A		UDING ROOMS 107, 187, 186, 130, 130A, 130B, 131, 132, OSTING AS HCA BUILDING 707 RADIOLOGICAL S	
	Mınımum Survey/Samplıng N	leasurement Requirements	
Measurement	Number and Type	Comments	
Surface Activity Measurements (continued)	EQUIRMENT 40 biased survey points on equipment wor more samples from Gloveboxes/Hoods/B-Boxes which visible leaks or contained spills berthem 2 surveys points at each of 5 room ducts 5 survey points on top of overhead (where locations are accessible throreach tools)	have leath exhaust	
Surface Scanning	FLOORS/WALLS < 2 meters 192 1 m ² surface scans shall be taken and location identified for surface activity measurements. Locations found to be all DCGL will be noted. CEILINGS/WALLS > 2 meters. NON EQUIPMENT. NONE	SEE NOTE 3 SEE NOTE 4	
Media Samples	Total of 3 biased (paint) media samples follows - 1 sample near one of the entrances module - 1 sample near contaminated equipm - 1 sample near a criticality drain	to the	
Volumetric Samples	NONE		
Isotopic Gamma Scans	NONE		

Package ID: 99-0002	Building 707
Survey Area: S	Survey Unit N/A

Survey Unit Description: INSIDE OF MODULE G INCLUDING ROOMS 107, 187, 186, 130, 130A, 130B, 131, 132, 132A, 133, AND 133A EXCLUDES ROOM 131A DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

422

Package 10: 99-0002	Building 707
Survey Area: S	Survey Unit N/A

Survey Unit Description: INSIDE OF MODULE G INCLUDING ROOMS 107, 187, 186, 130, 130A, 130B, 131, 132, 132A, 133, AND 133A EXCLUDES ROOM 131A DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample.
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

287/466

Package ID: 99-0002	Building 707
Survey Area.\\$	Survey Unit N/A

Survey Unit Description: INSIDE OF MODULE G INCLUDING ROOMS 107, 187, 186, 130, 130A, 130B, 131, 132, 132A, 133, AND 133A EXCLUDES ROOM 131A DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta-contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building 707
Survey Area: S	Survey Unit N/A

Survey Unit Description: INSIDE OF MODULE G INCLUDING ROOMS 107, 187, 186, 130, 130A, 130B, 131, 132, 132A, 133, AND 133A EXCLUDES ROOM 131A DUE TO POSTING AS HCA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected.
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos.
- 4- Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams of photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)



SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID·	99-0002	Building 707 Survey Unit N/A					
Survey Area:	: S						
Change #	Description		Initiator/ Date	PRE			
l	Added page 6A		A 12/21/99	M			
	Delated Red to dikin	KKUN 15 MENS	12/2/49	ATK-	W)		
2	Replaced pa 6 to Net	ek B Refs	1/18/00	ABE			
3	Replaced of GA W/ RO	erson pa	01/18/00	ABE			
4	REPLACED Pg 19 W/ PGS 9	-9K	D-4/27/00	EDM			
_5	REPLACED pg 2 W/ REVISE	b pg	do 5/4/00	ROM			
6	REPLACED PGS 5:6 W/REVIS	seo pas	do 5/4/00	ROM			
					1		
<u> </u>							
					1		
					1		
					1		
					1		
					1		
					1		
					1		
					1		
					-		

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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Building 707					
Survey Area S	Survey Unit N/A	urvey Unit N/A				
Survey Type: Reconnaissance Level Characterization	Survey X Final Status Surv	⁄ey □				
All Documentation Reviewed for Completion	RCT Supervisor	PRE				
Scan Surveys	1	do				
Total Activity Surveys	8	d				
Exposure Rate Surveys	NA	NA				
Removable Surveys	1	d				
Media Samples	all	Earl				
Volumetric Samples	NA	AK				
All Surveys and Samples Accounted For	RCT Supervisor	PRE				
Scan Surveys	1	d				
Total Activity Surveys	1	do-				
Exposure Rate Surveys	NA	NA				
Removable Surveys	1	d				
Media Samples	(M)	EOM				
Volumetric Samples	NA	NA				
Comments						
Tesso Manager I finted Name	тело манадого диатаго) Date				

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		7		Page 9 of 9					
		THE TO LOUIS THE WAY	CHUBAL WE CEDNOLO	CAT STITE .					
1	NSTRUMENT	DATA							
Mfg	Mfg	Mfg	Survey Type:						
Model	Model	Model	Building:						
Serial #	Serial #	Serial #	Location*						
Cal Due	Cal Due	Cal Due	Location* Purpose.						
Bkg	Bkg.								
Efficiency	Efficiency	Efficiency	RWP#						
MDA	MDA	MDA							
			Date	Time					
Mfg	Mfg	Mfg							
Model	Model	Model	RCT	11					
Serial #	Serial #	Serial #	Print name	Signature Emp #					
Cal Due	Cal Due	Cal Due		•					
Bkg	Bkg.	Bkg	RCT	11					
Efficiency	Efficiency	Efficiency	Print name	Signature Emp #					
MDA		MDA							
REMOVABLE Alpha DPM/100 cm ²	Beta	DIRECT DIRECT Alpha Beta DPM/100 cm ² DPM/100 cm ²	RESULTS REMOVABLE REMOVABLE Alpha Beta DPM/100 cm² DPM/100 cm²	DIRECT DIRECT Alpha Beta DPM/100 cm ² DPM/100 cm ²					
2			27						
3			28						
4			29						
5			31						
7	· · · · · · · · · · · · · · · · · · ·		32						
8			33						
9			34						
10			35						
11 12			36						
13			38						
14			39						
15			40						
16 17			41						
18			43						
19			44						
20			45						
21	-		46						
22 23			47						
23			49						
25			50						
Date Reviewed:_	x	RS Supervision:	rint Name	Signature P. #					

428

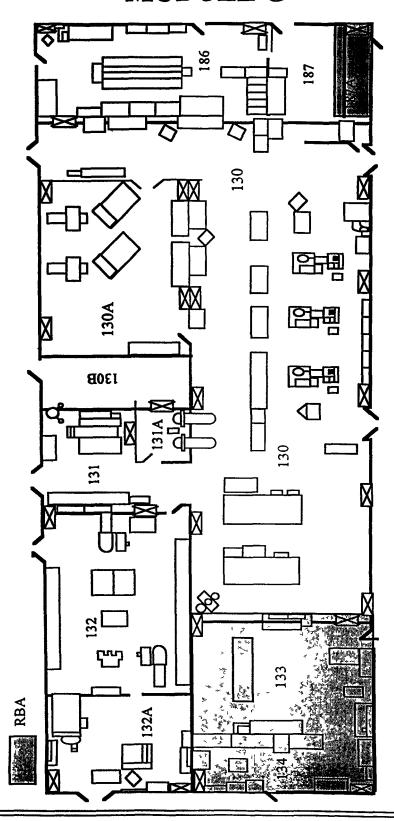
290/866

RIDIOLOGICAL SAFETY

Y**YRENWAU, WE**YCHINOLOGO SYLLI

Drawing Showing Survey Points

MODULE G



Rev. 05/98

N

INSTRUMENT DATA								
Mfg Eberline	Mfg NeTech							
Model Sac-4	Model Electra							
Serial # 837	Serial # 1518							
Cal Due <u>5-17-00</u>	Cal Due <u>4. 29-00</u>							
Bkg o.o cpm	Bkg Locpin							
Efficiency 33%	Efficiency 2/86							
MDA & Zdpm	MDA <u>94 dpm</u>							
Mfg Eberline	Mfg NE Tech							
Model BC-4	Model Electra							
Serial # <u>872</u>	Serial # 2307							
Cal Due <u>4-12 00</u>	Cal Due <u>7-/2 0 0</u>							
Bkg 64 cpm	Bkg 20cpm							
Efficiency 25%	Efficiency 1940							
MDA 121.3	MDA 94 dpm							
	Mfg _ Eberline Model _ Sac-4 Serial # _ &3 7 Cal Due _ 5-17-00 Bkg _ O.O. C.p.m Efficiency 33% MDA _ & Z d p len Mfg _ Eberline Model _ BC-4 Serial # _ &7 Z Cal Due _ 4-12 00 Bkg _ 4 _ C.p.m Efficiency 25%							

Building	_{Гуре} <u>Contamin</u> 707	
Location	6 medule	Survey Area S
Purpose	Reconnaisance L	evel Characterization

RWP # <u>(` (` 7) 7 /204</u>

Date 3-2 321 00 Time Days

Comments Floor / Walls < 2 meters; UB ased survey points

1 m² scans, 1 minute pats and swipes See map for locations 1 = 4 4 b Voya Courts alpha lleet a 28 C/M

SURVEY RESULTS

						,			
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	F	0	8	6	16	F	0	34	41.
2	F	C	28	-6	17	F	3	4	6
3	F	3	12	24	18	F	٥	-24	4E
4	F	0	-24	0	19	F	Č	76	355
5.	J -	b	-32	18	20	F	C	12	74
6	F	0	20	-6	21	F	Ċ	28	-12.
7	F	6	-12	3C	22	F	3	20	14
8	F	3	ئ	30	23	/-	3	1,6	24
9	F	0	-48	36	24	F	c	56	74
10	F	0	12	54	25	F	.3	12	3942
11	F	3	-40	252,	26	F	٥.	16	30
12	F	3	6	24	27	F	3	-12	4
13	F	0	74	6	28	F	<u>د_</u>	34	,3c
14	F	o o	E	6	29	F	Ć	76	4
15	F	3	28	18	30	F	3	-12	36

Date Reviewed: 4 3-00 RS Supervision:

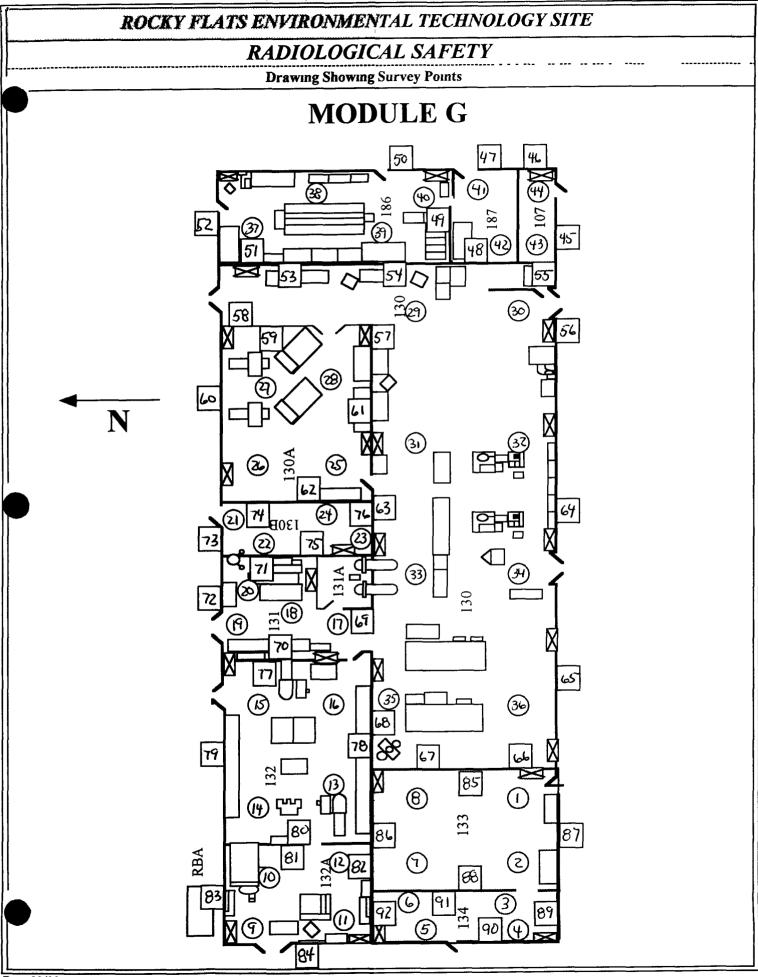
RADIOLOGICAL SAFETY

Drawing Showing Survey Points

be	Location\Description	Remo	vable	Total	Swipe	Location\Description	Reme	ovable Beta	Total Alpha
21	(Results in DPM/100cm ²)	Alpha	Beta	Alpha	61	(Results in DPM/100cm ²)	Aipiia 3		16
31		6	4	24		WKEn		16	
32	F	2	160	0	62	// // // // // // // // // // // // //	6	1,8	30
33	F	3	0	12	63	<i>l'</i>	C	76	12
34	F	6	60	54	64	11 11	0	4	24
35	F	0	12	42	65	<i>1</i>	.3	44	0
36	F	0	40	30	66	// //	C	-20	6
37	F	٥	4	12	67	1' 1'	<u></u>	8_	78
38	F	0	<i>4</i> ٤	30	68	// 1/	0	76	18
39	F	0	20	6	69	1 11	3_	-16	18
40	F	0	-44	12	70	, ,	C	44	0
41	F	3	8	24	71	/ //	6	48	6
42	F	0	88	30	72	/ //	3	16	3¢
13	F	3	16	-6	73	p p	3	-28	18
	F	0	- 4	6	74	ı H	3	ع	- 6
45	W' <zbn< td=""><td>Ŋ</td><td>-16</td><td>O</td><td>75</td><td>μ</td><td>C</td><td>ج</td><td>42</td></zbn<>	Ŋ	-16	O	75	μ	C	ج	42
46	11 11	3	- 52	-6	76	p u	C	54	24
47	н д	Ċ	44	-/8	77	11 11	C	æ.	12
48	11 11	٥	48	17	78	11 11	С	4.8	24
49	11 11	Ċ	36	24	79]]]]	0	12	64
50	// _{//}	0	60	12	80	1' 11	C	-20	4
51	h p	3	60	18	81	11 11	0	32	18
52	ν μ	3	0	18	82	/ /		-12	3¢
53	h µ	3	20	30	83	11 n		-20	12
54	,, ,,	0	-8	72	84	,, ,,	6	-64	18
55	n n	0	28	46	85	11 //	C	8	4
56	η μ	0	-12	18	86	11 11	3	-4	16
57	n p	12	76	30	87	11 11	C	28	3c
	η μ	0	16	6	88	n "	9	24	18
59					89	,,	0	4	42
	<u>// 11 </u>	0	36	24			,		-12
60	// /1	3	20	6	90	11 11	6	36	

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE										
RADIOLOGICAL SAFFTY 344										
						Points	Dem	ovable	Total	
pe #	Location\Description (Results in DPM/100cm ²)	Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha		Alpha	
91	W < 2m	6	-48	18	121					
92	(u) < 2m	0	4	6	122			ļ		
93	End c-f Survey				123			<u> </u>		
94					124					
95.					125					
96					126					
97					127					
98					128		<u></u>		ļ	
99					129					
100					130					
101					131					
102					132					
103_					133					
4					134	\				
105					135	\				
106	\				136					
107	\				137					
108					138					
109					139					
110	\	\			140		\			
111					141		· ·	 		
112		_\			142					
113					143		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			
114			`		144					
115					145					
116					146					
11 <u>7</u>					147					
3					148					
119					149					
120				\	150				\	

432 Rev 02/00



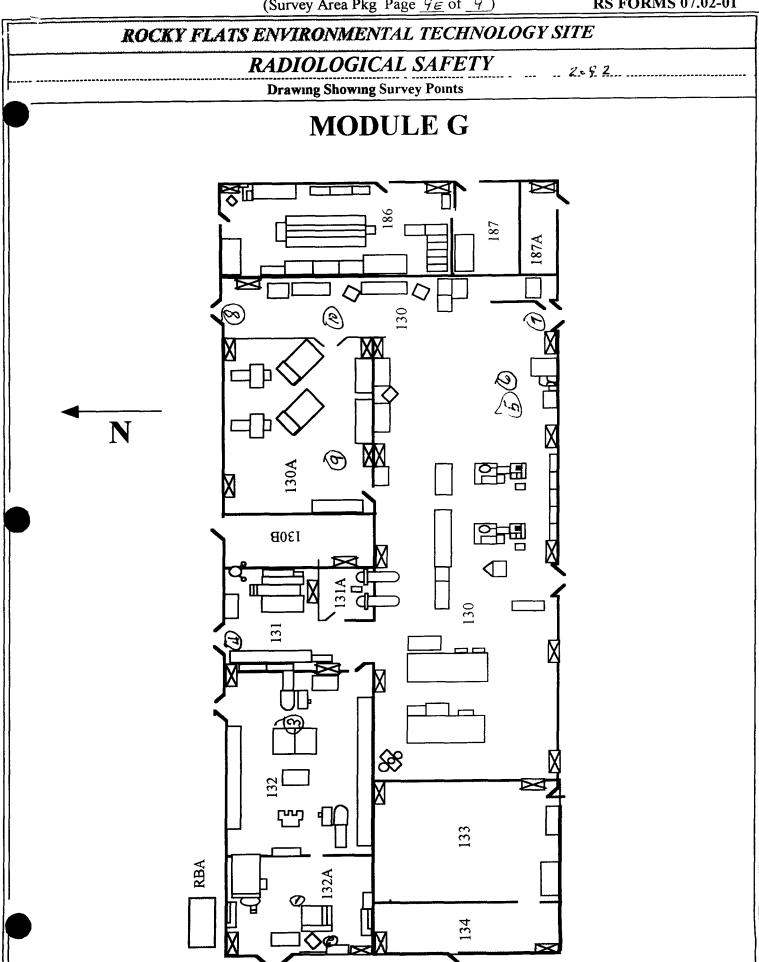
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

I	IN	STRUMENT DATA		~
	Mfg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination
1	Model Sac-4	Model Sac-4	Model Electra	Building _ 707
	Serial # 849	Serial #_837_	Serial # <i>1518</i>	Location 6 Medule Survey Area 5
	Cal Due <u>4-10-00</u>	Cal Due 5-17 00	Cal Due <u>6-29-00</u>	Purpose Reconnaisance Level Characterization
	Bkg 0,5 cpm	Bkg o.o com	Bkg 2,0 cp in	
I	Efficiency 33%	Efficiency 33%	Efficiency ,2186	RWP#_00 707 1204
	MDA 15.6 dpm	MDA 8,2 dpm	MDA 94 dpm	Date 3 23 3 27 00 Time Deys
	Mfg Eberline	Mfg _ Eberline _	Mfg NE Tech	,
	Model BC-4	Model BC-4	Model Electra	
	Serial # <u>872</u>	Serial # <u>833</u>	Serial # 1389	
I	Cal Due <u>4-12-00</u>	Cal Due 214-00	Cal Due <u>4-29-00</u>	
I	Bkg <u>54cpm</u>	Bkg <u>szepm</u>	Bkg 1.0cpm	
I	Efficiency 25%	Efficiency 25%	Efficiency , 2096	
li	MDA 112.3 dpm	MDA 111.3 cpm	MDA 94 dom	
۱	Comments Floor	/ Walls < 2 meters	Biased survey por	ints /0 2
	1 m ² scans, 1 mi	mute pats and swipe	s See map for lo	
I	blood Cou	unts alpha	electra 2	8cpm
I	- 1	,		'

SURVEY RESULTS

1									
Swipe #	a who is a second secon		Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Tot Alp ¹ .3	
1	Rm 132A Center of Rm	6	4	5448	16				
]]	F Rm132A Near South Well	ь	-20	6720	17	M/			
11	F Rm 132 yellow Arrow	3	-16	72	18	7			
H	Rrm 131 Front of Acon	3	36	24	19				
5	Rm 130 Old Paint	6	-48	1320	20				
_6	Rm 130 Old Paint	0	-20	1980	21				
7	Rm 130 Front of Dear	6	34	154	22				
11	F Rm 130 Front of Door	0	44	534	23				
9	F Rm 130 A	0	-52	12	24				
10	F Rm 130	6	-48	12	25				
	End of Survey				26				
12	NA				27				
13					28				
14					29				
15					_30				

Date Reviewed 4.300 RS Supervision



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA								
Mfg <u>Eberline</u>	Mfg Eberline	Mfg NeTech						
Model Sac-4	Model Sac-4	Model Electra						
Serial # 849	Serial #_837_	Serial #						
Cal Due 4-10-00	Cal Due <u>5-17 oc</u>	Cal Due <u>5-11 00</u>						
Bkg 05 cpm	Bkg 0.3 cpm	Bkg <u>1.ocpm</u>						
Efficiency 33%	Efficiency 33%	Efficiency , 2063						
MDA 15.6 dpm	MDA 13.9 dom	MDA 94 dpm						
Mfg Eberline	Mfg Eberline	Mfg \						
Model BC-4	Model BC-4	Model S						
Serial # 872	Serial # 833	Serial #						
Cal Due <u>4-17-00</u>	Cal Due 7-14-00	Cal Due						
Bkg 59cpm	Bkg 55cpm	Bkg						
Efficiency 25%	Efficiency 25%	Efficiency						
MDA 116.9 dpm	MDA //3.2 dem	MDA						
7 1	/ XXX 11 > 0 · ·	·						

Survey Type	<u>Contamina</u>	tion	
Building <u>70</u> 7			
Location <u>M</u>	dule 6	Survey Area	5
Purpose Rec	connaisance Lev	el Characterizatio	n
RWP#_OO	707 /204		
Date <u>3-22-</u>	OD Tim	e Days	

Signature

Comments Ceiling / Walls > 2 meters Biased survey points

1 minute pats and swipes See map for locations

North Counts alpha Weeta 28cpm

1013

Print name /

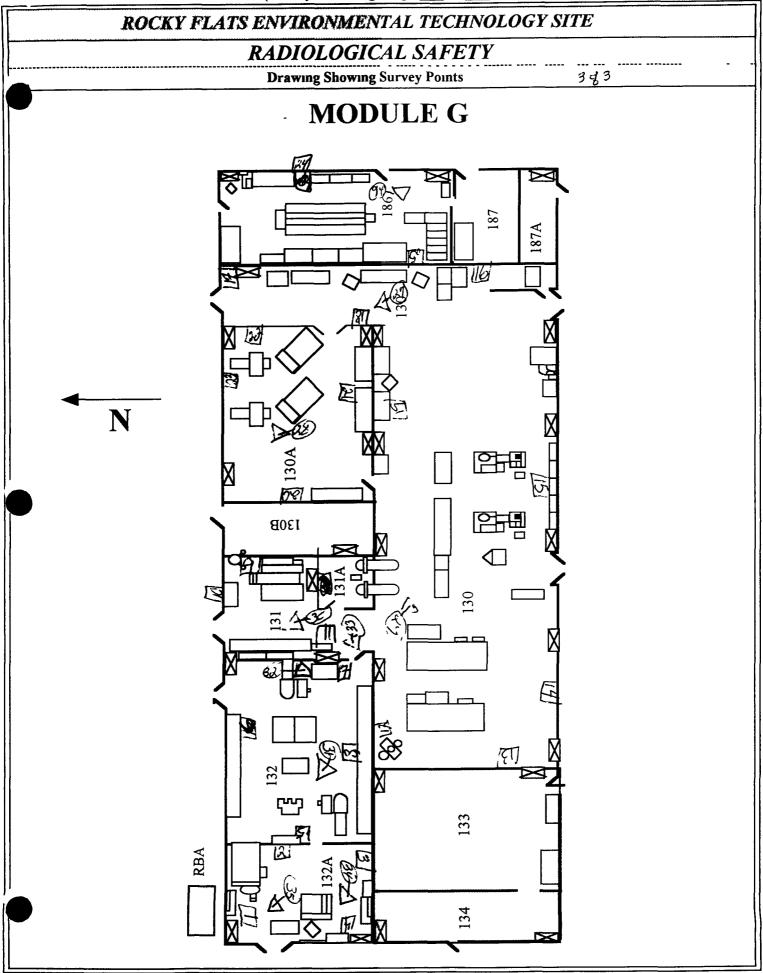
/ Emp #

SURVEY RESULTS

Swipe	Location\Description	Removable		Total	Swipe	Location\Description	Removable		Total
#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
1	WZZm	0	44	6	16	WZZm	0	32	6
2	11 11	0	-12	24	17	n 11	0	4	12
3	n n	6	٥	6	18	II ji	0	16	12
4	// _/ /	٥	12	O	19	fi ii	U	-8	12
5	// //	0	28	6	20	$n = \mu$	3	44	12
6	μ μ	0	24	0	21	h 11	0	4	0
7	lı jı	0	20	ઇ	22	11 11	C	-36	12
8	ון וו	0	-8	6	23	11 11	O	24	-6
9	// 11	0	48	0	24	n //	0	-16	6
_10.	p //	3	ક	-6	25	11 11	3	-16	6
11	ון וו	6	32	6	26	Ceiling	0	-20	6
12	<i>''</i>	0	24	6	27	11	G	-40	12
13.	ji ji	3	44	12	28	"	Ü	28	12
14	ν μ	0	56	-6	29	11	o	20	12
15	11 11	0	24	Ó	30]/	0	24	10

Date Reviewed: 4.3.00 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE												
RADIOLOGICAL SAFETY												
Drawing Showing Survey Points 2 3 Removable Total Swipe Location Description Removable Total												
ipe #	# (Results in DPM/100cm ²) Alpha Beta Alpha # (Results in DPM/100cm ²) Alpha Beta											
31	Ceiling	٥	8	6	61							
32	J'	3	4	24	62	13	ļ					
33	p	0	16	48	63	7						
34	<i>)</i>	3	32	6	64							
35	П	3	12	12	65							
36	End of Survey				66							
37	7				67	`\						
38					68							
39					69	\						
40		<u></u>			70_							
41					71	\						
42					72	\						
13					73							
4					74							
45					75							
46					76							
47					77							
48					78							
49					79							
50					80							
51					81							
52					82							
53					83							
54					84							
55					85							
56					86							
57					87				\			
8				abla	88							
59					89							
60				_/	90							
Rev_02/	<u> </u>	1	'									



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA									
Mfg Eberline	Mfg Eberline	Mfg NeTech							
Model Sac-4	Model Sac-4	Model_Electra							
Serial # 849	Serial #_837	Serial # 1518							
Cal Due <u>4-10-00</u>	Cal Due 5-17-06	Cal Due 6-19-00							
Bkg O.5 cpm	Bkg o,c cpm	Bkg Zioepm							
Efficiency 33%	Efficiency 33%	Efficiency, 2/86							
MDA 15.6 dpm	MDA 8,2 dpm	MDA 94 dpm							
Mfg Eberline	Mfg Eberline	Mfg NETech							
Model BC-4	Model BC-4	Model Electric							
Serial #_872	Serial # 833	Serial # 1389							
Cal Due <u>4-12-00</u>	Cal Due 7-14-00	Cal Due 6-29-00							
Bkg 54 cpm	Bkg 53 cpm	Bkg 10 cpm							
Efficiency 25%	Efficiency 25%	Efficiency, 2096							
MDA 112-6 dem	MDA /11/3 dpm	MDA 94 dom							
Comments Equipment Biased survey points									

Survey Type	<u>Contamination</u>	1
Building $_70$	7	
Location 6 17	Todule	Survey Area S
Purpose Re	econnaisance Level (Characterization

RWP # OC 701 1204

Date 323 3-27 00 Time Days

Comments Equipment Biased survey points 143

1 minute pats and swipes See map for locations by Kay d Courts alpha Meeta -8cpm

SURVEY RESULTS

l <u> </u>	202121200210								
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	novable Beta	Total Alpha
1	Rm 132A Air Vent # 18	0	36	90	16	Rm 130 Tank	c	14	12
2	Sm 132A Air Vent #17	3	32	312	17	Rm 130 Airlant # 10	3	36	816
	Bm 136A 2 copperpipe, Value	3	4	30	18	Rm 130 Airlient 28	12	-10	150
	Rm 132A Power Control Bay	0	36	18		Rm 130A B ston Guan Retiotion	1 4	4	150¢
) :	Rm 132 Pipe, Value, Box	3	40	30	20	Rm 130A Air vent # 7	3	ę	LC
6	Rm 132 Air Vent *16	0	o	138	21	Rm 1304 Air Vent #5	9	6	180
7	Rmi32 Mover Cort	6	48	180	22	Ran 130 Airkant #3	9	-20	210
	Rom 132 Air Vent #15	3	4	120	23_	Rm 130 Air kent	90	4	228
9	Rm 132 Box	3	52	24	24	Rom 130 Down Dratt Table	0	-32	34
10	Rm 132 Elective 1 Pipe Box	0	-20	6		Rm 130 Air Vent # 36	6	72	180
1	Rm 131 Trich. Tank	156	12	12714	26	Rm130 Air Vent #33	3	44	120
	Rm 131 Work Bench	0	-44	654	27	Rm 130 Manual Table # 28	4	0	22320
13	Rm 131 Platform	12	- 12	300	28	Rm 130 Monual Tabe # 27	0	-32	120
14	Rm 131 Top of Trick. Tent	3	32	48	29	8m130 Electrical Connection	0	44	108
15	m 130 Air Went * 17	27	-16	90	30	Am 130 Air Vent #25	3	-4	46

Date Reviewed 4300 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY **Drawing Showing Survey Points** Removable Total Removable Total Swipe Location\Description Location\Description Alpha Beta (Results in DPM/100cm²) Alpha Alpha Beta (Results in DPM/100cm²) Alpha Pm 130 Air Vent # 23 -8 1962 32 Rm 130 Manual table 32 -28 33 Rm 186 Au Vent #2 0_ 34 Rm 186 Air Vent 35 Rm 187 File Cabinet -28 b 36 Rm 187A Air Vent #1 37 Rm 133 Air Vent #34 38 Rm /33 Air Vent # 35 -20 39 Rm 134 A 1 Vent #37 -4 Rm 134 Air Vent #36 End of Survey

(Survey Area Pkg Page $\underline{9}$ of $\underline{9}$)

RS FORMS 07 02-01

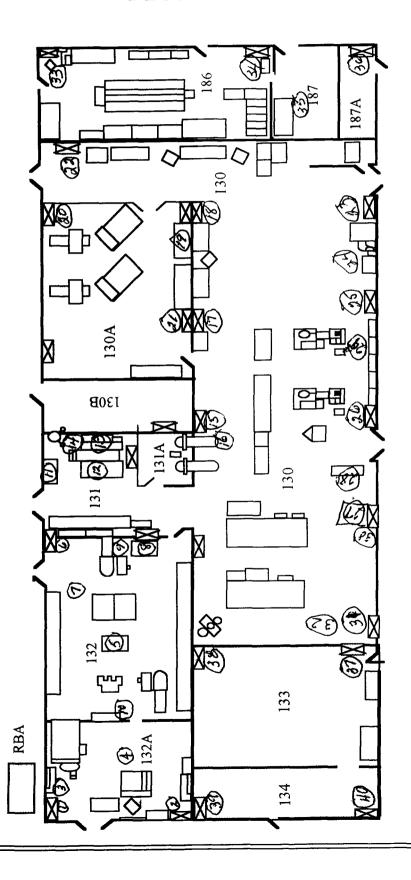
...343.....

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE G



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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002		Building 707 Survey Unit N/A					
Survey Area: T							
Initiator/ Date	Release Date	Validation Date	Closure Date				
M 10/25/49	9) 12/21/49	100y 6/14/00	EMY 6/14/00				

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Protested of 2/22/00 Cha # 4 INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99	0002	Building 707	Type 3				
Survey Area T		Survey Unit N/A	<u> </u>	Area (m ²) 634			
	cription. INSIDE C , AND 136 BUILE ON AREAS						
Survey Type			Classification				
RLC Survey X	FSS 🗖		Class 1 □ Class	2 □ Class 3 □ U	Jnknown X		
Random/Uniform Surface Activity	Biased Surface Activity	Equipment Surface Activity	Media Samples	Volumetric Samples	Surface Activity Scans		
Measurements	Measurements	Measurements		Samples	Scans		
140	85	40	3	0	157		
Building	\	Type.		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type			Classification				
RLC Survey □	FSS 🗆	\	Class 1 Class	2 □ Class 3 □ U	Jnknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
-							
Building		Type	Survey Area				
Survey Unit			Area (m²)				
Survey Unit Desc	cription	-					
Survey Type			Classification	-			
RLC Survey □	FSS 🗆		Class 1 Class 2 Class 3 Unknown C				
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре		Survey Area			
Survey Unit			Area (m²)	\			
Survey Unit Desc	ription						
Survey Type			Classification				
RLC Survey □	FSS 🗆		Class 1 Class 2	2□ Chass 3□ U	Jnknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	0002	Building: 707		Type 3				
Survey Area T		Survey Unit N/A	1	Area (m ²) 634				
	, AND 136 BUILD		CLUDING ROOMS 189, 190, 191, 135, VAULTS 135A LOGICAL AREAS ARE POSTED AS FIXED					
Survey Type			Classification					
RLC Survey X	FSS □		Class 1 🗆 Class	2 □ Class 3 □ U	J nknown X			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans			
72	35	30	3	0	82			
Building		Туре		Survey Area				
Survey Unit.			Area (m²)					
Survey Unit Desc	cription	· · · · · · · · · · · · · · · · · · ·						
Survey Type			Classification					
RLC Survey □	FSS 🗆		Class 1 □ Class	2 □ Class 3 □ U	Jnknown □			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans			
*			j					
Building		Туре	Survey Area					
Survey Unit.	··-	·	Area (m²)					
Survey Unit Desc	cription.							
Survey Type			Classification					
RLC Survey □	FSS 🗆		Class 1 □ Class 2 □ Class 3 □ Unknown □					
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans			
Building		Type		Survey Area				
Survey Unit			Area (m²)		حسن خد پیش د			
Survey Unit Desc	Survey Unit Description							
Survey Type			Classification					
RLC Survey 🗆	FSS □		Class 1 □ Class		Jnknown □			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans			

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707					
Survey Area: T	Survey Unit· N/A					
Survey Unit Description: INSIDE OF MODULE H INCLUDING ROOMS 189, 190, 191, 135, VAULTS 135A THROUGH 135F, AND 136 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS						
Building Information:						
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey					
Building Type Type 1 Type 2 Type 3 X						
Classification Class 1 🗆 Class 2 🖵 Class 3 🗅 Un	known X					
Contaminants of Concern Plutonium X Uranium X	Other					
Justification for Classification: N/A						
Special Support Requirements: Ladder, manla instrumentation may be required for access into	· · · · · · · · · · · · · · · · · · ·					
Special Safety Precautions: Access to overhead Review RWP requirements and surveys prior to overheads	· ·					
Isolation Controls:						
Level 1 🗆 Level 2 🗖 N/A X						
Labeling Requirements: NONE						
Laboring Rodan Cimenton 11(511)						
Survey Package Implementation:	3					
	_					

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RSFORM For superceded # 3/21/00 Chg #4 PAC SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID. 99-0002 Building: 707 Survey Unit N/A Survey Area: T Survey Unit Description: INSIDE OF MODULE H INCLUDING ROOMS 189, 190, 191, 135, VAULTS 133A THROUGH 135F, AND 136 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS Minimum Survey/Sampling Measurement Requirements Measurement Number and Type Comments FLOORS/WALLS < 2 meters Surface Activity **SEE NOTE 1** Measurements 140 unbiased survey points uniformly distributed **SEE NOTE 2** as follows **SEE NOTE 3** Rooms 189, 190, 191, Vaults 135A through **SEE NOTE 4** 135F (2 per wall/3 per floor) Room 136 (3 per wall/ 5 per floor) Room 135 (3 per wall/9 per floor) 17 biased survey points at the following locations 2 points near criticality drain locations 5 points near fixed equipment/items labeled as internally contaminated Other areas as determined by REVRCT CEILINGS/WALLS > 2 meters 68 biased surveys as follows Rooms 189, 190, 191, Vaults 135A through 135F (1 per wall/1 per ceiling) Room 136 (2 per wall/2 per ceiling) Room 135 (2 per wall/3 per ceiling) Walls behind process lines/fixed process equipment Ceilings above GB's/B-Boxes/Hoods Ceilings/walls adjacent to c-cells/tents Stained or discolored areas Walls/ceilings near GB's mounted high on Areas around pipe or other penetrations **EOUIPMENT** 40 biased survey points on equipment with one or more samples from Gloveboxes/Hoods/B-Boxes or areas which

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have visible leaks or contained spills

2 surveys points at each of 5 room exhaust

5 survey points on top of overhead piping

(where locations are accessible)

beneath them

Package ID 99-0002		Building 707			
Survey Area: T	S	Survey Unit N/A			
VAULTS 135A T		INCLUDING ROOMS 189, 190, 191, 135, DING 707 RADIOLOGICAL AREAS ARE			
	Mınimum Survey/Samplıng M	easurement Requirements			
Measurement	Number and Type	Comments			
Surface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1			
Measurements	72 <u>unbiased</u> survey points uniformly distr	ributed SEE NOTE 2			
	throughout the survey area	SEE NOTE 3			
	10 biased survey points at the following locations	SEE NOTE 4			
	- 2 points near criticality drain locatio	ns			
	- 5 points near fixed equipment/items as internally contaminated	labeled			
	- Other areas as determined by RE/RC	CT			
	CEILINGS/WALLS > 2 meters				
	25 <u>biased</u> surveys as follows				
	- Walls behind process lines/fixed pro equipment	ocess			
	- Ceilings above GB's/B-Boxes/Hood				
	- Ceilings/walls adjacent to c-cells/ter	nts			
	- Stained or discolored areas				
	- Walls/ceilings near GB's mounted h walls				
	- Areas around pipe or other penetration				
	Other areas as determined by RCT/R	KE			
	EQUIPMENT				
	30 biased survey points on equipment with or more samples from	th one			
	Gloveboxes/Hoods/B-Boxes or areas have visible leaks or contained spills beneath them				
	- Surveys points at room exhaust duct	s			
	- Survey points on top of overhead pip (where locations are accessible)	oing			
	- Other areas as determined by RCT/R	RE			

Package ID: 99-0002		Building 707			
Survey Area: T		Survey Unit N/A			
VAULTS 135A TI		LDING 70	DING ROOMS 189, 190, 191, 135, 7 RADIOLOGICAL AREAS ARE		
	Minimum Survey/Sampling	Measuren	nent Requirements		
Measurement	Number and Type		Comments		
Surface Scanning	FLOORS/WALLS < 2 meters 82 1 m² surface scans shall be taken at location identified for surface activity measurements. Locations found to be DCGL will be noted. CEILINGS/WALLS > 2 meters. NO EQUIPMENT. NONE.	above the	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4		
Media Samples	Total of 3 biased (paint) media sample follows - 1 sample near one of the entrance module - 1 sample near contaminated equil - 1 sample near a criticality drain	es to the	SEE NOTE 5		
Volumetric Samples	NONE				
Isotopic Gamma Scans	NONE				

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Pg Supercoded) 3/22/00 (hz #44 PAGE S SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-00	002	Building	s· 707		
Survey Area: T	\	Survey Unit N/A			
Survey Unit DescrivaULTS 135A TI		H INCLUI LDING 70	DING ROOMS 189, 190, 191, 135, 07 RADIOLOGICAL AREAS ARE		
	Minimum Survey/Sampling	Measurei	ment Requirements		
Measurement	Number and Type		Comments		
Surface Scanning	FLOORS/WALLS < 2 meters 157 1 m ² surface scans shall be taken a location identified for surface activity measurements. Locations found to be DCGL will be noted. CEILINGS/WALLS > 2 meters. NO EQUIPMENT. NONE.	above the	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4		
Media Samples	Total of 3 biased (paint) media sample follows - 1 sample near one of the entrance module - 1 sample near contaminated equip - 1 sample near a criticality drain	s to the	SEE NOTE 5		
Volumetric Samples	NONE				
Isotopic Gamma Scans	NONE				

RSFORMS-16.01-8

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont) (# 2

Package ID: 99-0002	Building 707
Survey Area: T	Survey Unit N/A

Survey Unit Description: INSIDE OF MODULE H INCLUDING ROOMS 189, 190, 191, 135, VAULTS 35A THROUGH 135F, AND 136 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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Package ID: 99-0002	Building 707					
Survey Area· T	Survey Unit N/A					

Survey Unit Description: INSIDE OF MODULE H INCLUDING ROOMS 189, 190, 191, 135, VAULTS 135A THROUGH 135F, AND 136 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection.
- Media Sampler Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

Package ID : 99-0002	Building 707
Survey Area. T	Survey Unit N/A

Survey Unit Description. INSIDE OF MODULE H INCLUDING ROOMS 189, 190, 191, 135, VAULTS 135A THROUGH 135F, AND 136 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected.
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building 707
Survey Area: T	Survey Unit N/A

Survey Unit Description. INSIDE OF MODULE H INCLUDING ROOMS 189, 190, 191, 135, VAULTS 135A THROUGH 135F, AND 136 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected.
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4- Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e g, indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

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SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0002		Building 707	Building 707				
Survey Area	T	Survey Unit N	Survey Unit N/A				
Change #	Descript	tion	Initiator/ Date	PRE			
	Added page 6	A	97 12/21/19	ABE.	01,		
_2	Trebeled not to di	RECT /SCAN /5 MEN	5 11/2/14	MILE			
2	Replaced Py 6	to de kter & ads	2 / 1/18/00	ALZE "			
	Replied of GA W	I nevised pa	Ma/18/00	ABE			
4	Replaced po 2,4,5	SURVEY PES	Alp 3/22/00	MBS			
<u></u>	REPLACED pg 9 w/	ogs 9-9H	1 4/27/OC	EDW			
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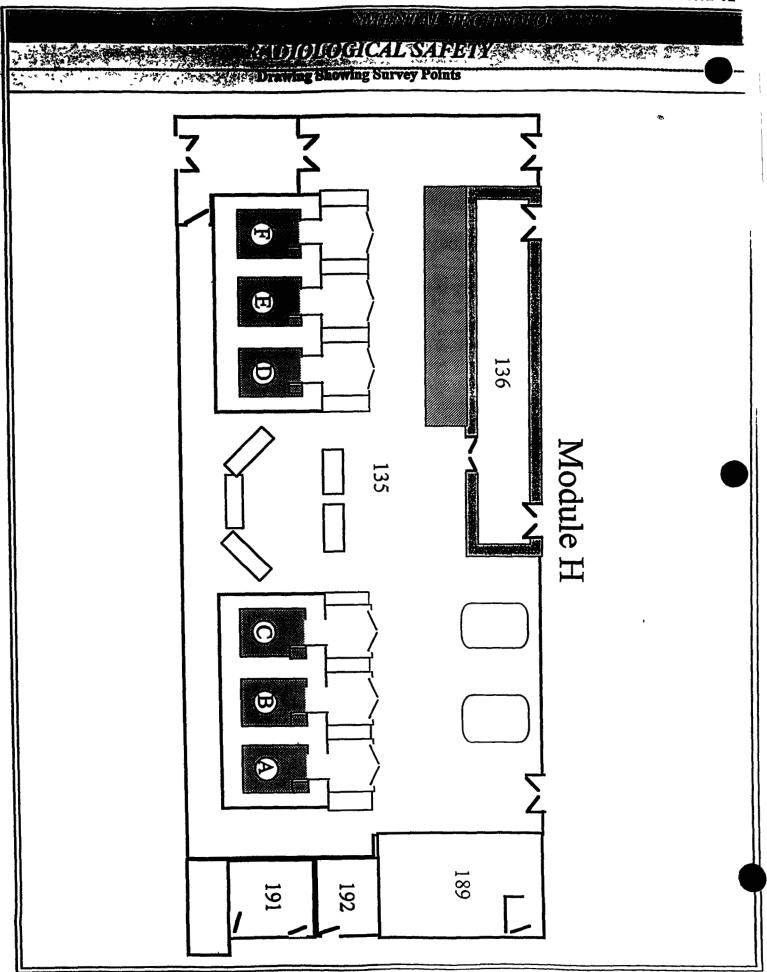
SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Buı	lding 707			
Survey Area T Survey Unit N/A					
Survey Type. Reconnaissance Level Characterizat	ion Surve	y X Final Status Surv	еу 🗆		
All Documentation Reviewed for Completion		RCT Supervisor	PRE		
Scan Surveys		1	d-		
Total Activity Surveys		1	So-		
Exposure Rate Surveys		NA	NA		
Removable Surveys		1	d-		
Media Samples		<u>a</u>	Emy		
Volumetric Samples		NA	NA		
All Surveys and Samples Accounted For		RCT Supervisor	PRE		
Scan Surveys		1	do		
Total Activity Surveys		1	dr-		
Exposure Rate Surveys		NA	NA		
Removable Surveys		1	d		
Media Samples		ass	EM		
Volumetric Samples		NA	NA		
Comments	<u></u>				
		Ngpature	l Data		
		Signature	Date		

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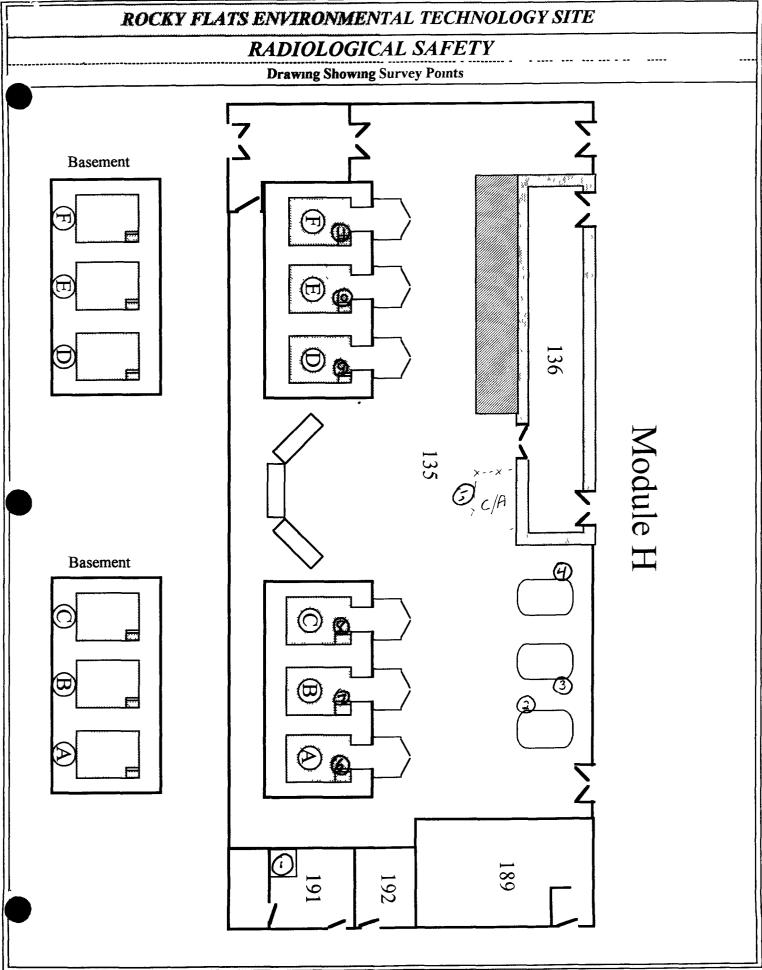
		The American American	BNUBAL TECHNICACI	AV MITE			
	INSTRUMENT D	ATA					
Mfg	Mfg		Survey Type:				
Model	Model		Survey Type: Building:				
Scrial #	Serial #	Nodel Serial #	Location:				
Cal Due	Col Due		Purpose:				
	Cal Due		T in pose.				
Bkg.	Bkg.	Bkg.	- DWD #				
Efficiency	Efficiency		_ RWP #				
MDA	MDA			Time			
	1.60	N/C-	Date	Thic			
Mfg	Mfg	Mfg Model	- RCT	/			
Model	Model			Signature Emp. #			
Serial #	Serial #	Serial #		Signature Emp. #			
Cal Due	_ Cal Due		RCT	,			
Bkg	Bkg.			Signature Emp #			
Efficiency MDA	Efficiency MDA	Efficiency MDA	 ∤	Signature isinp #			
PRL#:Comments							
REMOVABI Alpha DPM/100 cm 1 2 3 4 5 6 7 8 9 10 11	Beta n² DPM/100 cm² I	DIRECT Alpha Beta DPM/100 cm²	26	DIRECT DIRECT Alpha Beta DPM/100 cm² DPM/100 cm²			
13 14 15 16 17 18 19 20 21			37 38 39 40 41 42 43 44 45 46				

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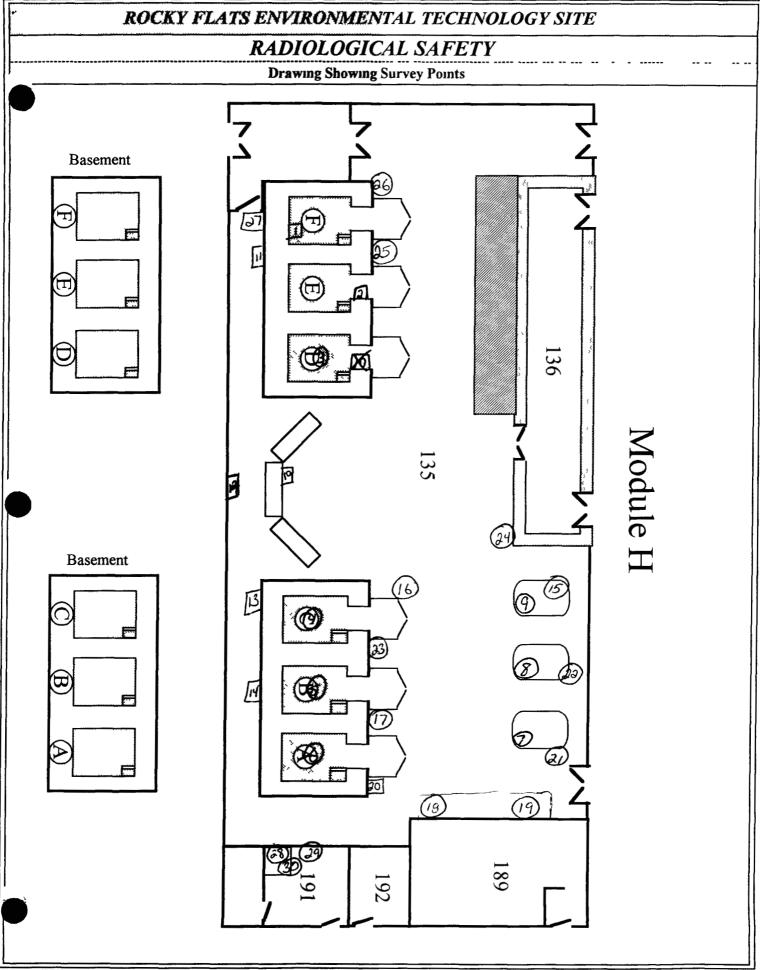


Rev. 05/98

3		ROCKY FLA	TS E	NVIR	ONM.	ENT	AL TECHNOLOGY SIT	E			
	IN	STRUMENT DAT	ГА			,	C				
Mfg		Mfg Eberline		g NeT			vey Type Contamination	<u>n</u>			
7	el_Sac-4	Model Sac-4	-	Model Electra			Building 707				
	1 # 849	Serial #	-	nal #		1	Location Medure H Survey Area T Purpose Reconnaisance Level Characterization				
	Due 4 10-00	Cal Due	-	Due 6		Purp	ose Reconnaisance Level	CHALAC	lei izati	.011	
	a4 cpm	Bkg		g lepr		RW	P# 00 - 707 -120	4			
Efficiency 33% Efficiency 17°7 MDA 148 dem MDA MDA 94 don											
li	4 148 dpm	MDA			apm	Dat	e <u>3-27 00</u> Time	/630)		
Mfg		Mfg Eberline	_ Mf	- —							
11	lel BC-4	Model BC-4	-	odel							
	al # <u>872</u>	Serial # 833	-	ral # l Due _ <i>N</i>	X/n						
	Due <u>4-12-00</u>	Cal Due 7-14-0 Bkg 53-pn	•		\leftarrow						
	ciency 25%	Efficiency 25%		iciency	- +						
	A 114 1 dam				$- \neq$						
		/ Walls < 2 meter			rvev no	onts					
il .		inute pats and swi		See ma			18				
	All ON		.p.u		p 10						
	7, 0										
				<u>SU</u>	RVEY	RESU	LTS				
Swipe	Location\Desc	nption	Rem	ovable	Total	Swipe	Location\Description	Rem	ovable	Total	
#	(Results in DPM/		Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha	
1	SEE MA	ρ	0	0	114	16					
2	See MAL		0	-16	24	17					
3	See MA	K	0	-8	6	18					
4	See MA	C	0	72	30	19					
5	See Min	P	0	-20	24	20					
6	See Ma		0	-32	42	21		7			
7	See MA	0	0	-44	78	22					
8	See Mil	200	6	0	126	23	NA				
9	See Pil	40	6	28	66	24					
10	See M.	MD	0	12	108	25					
11	See Min	; P	0	32	96	26					
12	END O	of Survey	/			27					
13		of Survey				28					
14		A				29				ı 	
15				_		30					
	Reviewed. 4	12600 RS Si	ipervis	ion _							



* :	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE												
		STRUMENT DAT				-7	C40			<u>-</u>			
		Mfg Eberline		fg Ne			Survey Type Contamination						
	del Sac-4			Model Electra			Building 707						
			Serial # 1518				ation Module 11		rvey A				
		Cal Due <u>4-10-06</u>											
DKR	O Acpm	Bkg <u>o 3 on</u>	_ DK				VP# 00-707 120°	1					
		Efficiency 33%		IDA OH 1									
]]	-	MDA 13.9 Spm			cipm	Dat	te <u>3-29-00</u> Time	1630	>				
11 -	g <u>Eberline</u>	Mfg Eberline		g <u>\</u>									
11	del BC-4	Model BC-4		odel		RC	T Her Sey / Jones Print name / Signat	<u>~</u>					
	nal #_ <u>872</u>	Serial # 833		rial #			Print name Signat	ute					
		Cal Due 7-14-00			~ X4 —								
DKE		Bkg 53.pm		g ficiency	+	RC	Print name / Signati	·-					
		Efficiency 25% MDA 113 day	•				Print name / Signati	ıre	/				
88		oment Biased su				71			-				
11		nd swipes See r											
	minute pats un	in swihes pec i	nap ro	l IUCam	0112								
									<u> </u>				
				SU	RVEY	RESU	LTS						
Swipe	Location\Descr	antion	Rem	ovable	Total	Swipe	Location\Description	Ren	novable	Total			
#	(Results in DPM/		Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha			
1	PANE!		3	0	102	16	canberra Eguip	3	8	84			
2	Vert		0	-/6	48	17	Transformer	0	0	90			
3	autoclar	e	0	-16	48	18	work station,	3	0	54			
4	autoclar autockiv	٠	3	-16	5-4	19	work station	3	-8	42			
	grocker		3	-24	66	20	Hydradic ystem	6	-16	66			
6	actodas	∕e	3	24	90	21	FUINACE PUNE!	0	-24	36			
7	FURNACE		0	-32	8 30 9 23°	22	FURNACE Pump	3	32	66			
	Furnace		3	-/6	66	23	Hydravin system	0	-40	60			
9	Eurwace		0	48	72	24	cubinet	4	28	78			
10	90 5-38-00 PX	ane.	0	-20	72	25	Hyelroulic System	0	-4	78			
i i	Air lines		0	0	24	26	Airlines	3	44	144			
1	Helon sy	stem (old)	0	0	36	27	Actives (coolins lines)	0	20	12			
13			0	48	/38	28	SINK	O	-20	18			
14	Cooking wa	azer	0	28	102	29	BASIN	0	-8	66			
	FUTNACE 1	,	3	-20	108	30	MIFFOR HOUSING	3	16	60			
Date !	Reviewed. 4	RS Su	pervisi	on:	Sílu		rack SSF			_			
	Print Name Signature												



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

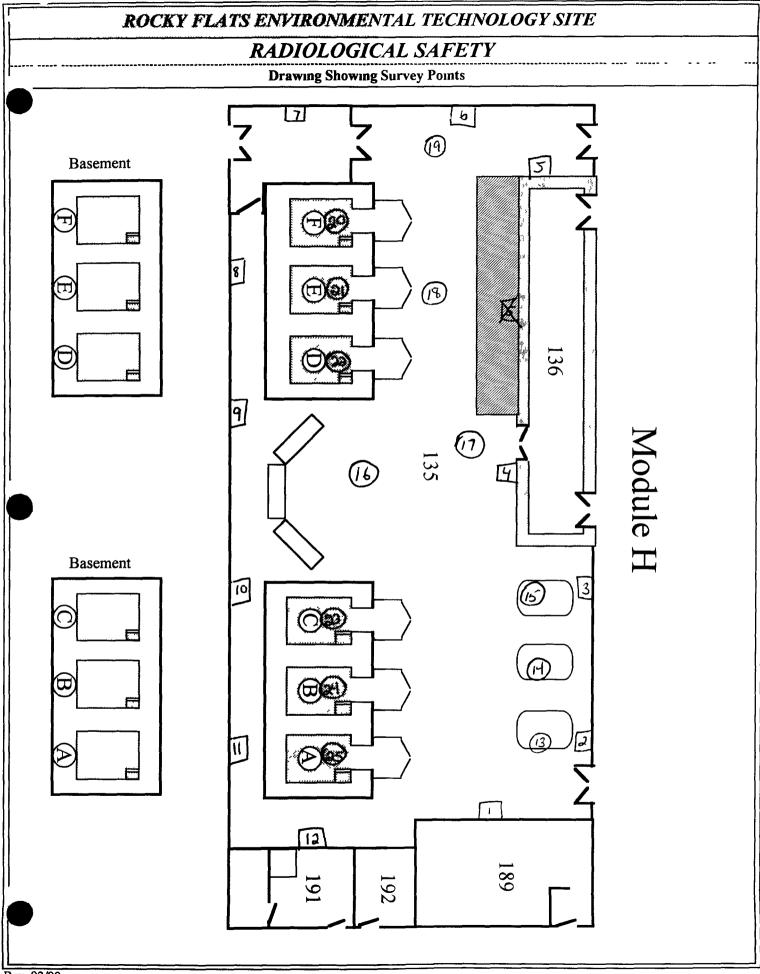
IN	STRUMENT DATA								
Mfg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination						
Model Sac-4	Model Sac-4	Model_Electra	Building						
Serial # 812	Serial #_849	Serial #25 18 1233	Location Modele H Survey Area T						
Cal Due 9 25-00	Cal Due 4-10-00	Cal Due 5-11 00	Purpose Reconnaisance Level Characterization						
Bkg <u>o 1 cpm</u>	Bkg 06 -pn	Bkg 10							
Efficiency 33%	Efficiency 33%	Efficiency 17%	RWP# 00-707-1204						
MDA <u>115 dpm</u>	MDA 16 3 dpm	MDA 94 dpm	Date 3-28-00 Time 1630						
Mfg <u>Eberline</u>	Mfg Eberline	Mfg\							
Model BC-4	Model BC-4	Model	R						
Serial # 872	Serial # <u>833</u>	Serial #							
Cal Due <u>9-12-00</u>	Cal Due 7-14-00	Cal Due VA							
Bkg <u>52 cpm</u>	Bkg 54 cpin	Bkg	R						
Efficiency 25%	Efficiency 25%	Efficiency	1						
MDA 1104 dpm	MDA 112.3 dom	MDA							
Comments <u>Ceilin</u>	Comments Ceiling / Walls > 2 meters Biased survey points								
1 minute pats ar	nd swipes See ma	p for locations							

SURVEY RESULTS

OCKVET RESOURCE										
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	
1	Wall	3	96	48	16	Ce, /pra	0	-20	36	
2	wall	0	-8	84	17	Cerling	0	32	30	
3	wall	6	20	66	18	Ce, I, Ng	0	-8	42	
4	wall	0	52	90	19	Cerling	0	60	54	
_ 5	wall	0	72	30	20	Ce, line	0	-20	264	
6	wall	0	60	18	21	Cerling	0	60	76	
7	eva//	0	36	30	22	Ceiling,	0	12	42	
8	wall	0	100	30	23	Cerling	6	12	120	
9	wall	3	56	18	24	Cerling	0	8	102	
10	wall	0	જ	42	25	Ceiling	0	40	108	
11	wall	0	36	54	26	END OF Survey				
12	wall	9	-44	12	27					
13	Cerling	0	60	18	28	NA				
14	Ceiling	0	-24	30	29					
15	Cerling	0	44	18	30					

Date Reviewed 4.26.00 RS Supervision

Print Name Signature



(Survey Area Pkg Page $\underline{\mathcal{Y}}$ of $\underline{\mathcal{Y}}$) RS FORMS 07 02-01												
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE												
INSTRUMENT DATA												
Mfg Eberline Mfg Eberline Mfg NeTech Survey Type Contamination Model Sac-4 Model Sac-4 Model Electra Building 707												
Mod	lel Sac-4	Model \Sac-4	ding									
	al # <u>849</u>	Serial #		rıal #	518	Loca	tion Module H		vey Are			
		Cal Due ~	_ Ca	ıl Due <u>6</u>	-29-00	Purp	ose Reconnaisance Level	Charac	cterizat	ion		
Bkg	04 spm	Bkg		g lepr		7377	P# 00 - 707 -120	2				
	ciency 33%	Efficiency 33%		ficiency		i i	P# 00 - 70 / - 70					
MD.	A 14.8 dpm	MDA	<u>\</u> M	DA <u>99</u>	dom	Dat	e <u>3-27-00</u> Time _	1630	9			
Mfo	g Eberline	Mfg Eberline	M	fg \			- <u> </u>					
_	del BC-4	Model BC-4		odel \			,					
\$		Serial # 833	_	rial #						_		
L		Cal Due 7-14-00	_	l Due M	X							
		Bkg <u>53 cpm</u>			$\overline{}$							
		Efficiency 25%	_	ficiency_		1						
		MDA 111.3 do	_									
		/ Walls < 2 mete			survey	points	3					
·		nute pats and sw			-	_						
Le	ocations 6	4-72 in 1	Vault	+ - ti	70 lle	dru	m					
				SU	RVEY	RESU	LTS					
Swipe	Location\Descr	Introp	Rem	novable	Total	Swipe	Location\Description	Ren	novable	Total		
#	(Results in DPM/	100cm ²)	Alpha	Beta	Alpha	3wipe	(Results in DPM/100cm ²)	Alpha	Beta	Alpha		
1	Floor		0	28	42	16	Floor	0	44	90		
2	Wall		3	4	72	17	wa//	0	36	6		
3	Floor		0	28	54	18	F/005	0	36	24		
4	Wall		0	16	18	19	F/005	0	4	42		
5	Wall		0	-24	54	20	wall	0	8	18		
6	Floor		0	-24	60	21	Flos:	6	16	54		
7	Wall		3	40	66	22	wall	0	-4	42		
8	f/005		3	20	60	23	F/035	0	-32	24		
9	Floor		0	0	24	24	F/00;	3	-12	30		
10	Floor		0	4	24	25	F/005	6	8	24		
11	wall		0	-28	24	26	wall	0	-12	42		
12	Floor		3	20	30	27	F/oor	0	12	42		
13	wall		3	20	24	28	Floor	0	42	66		
14	Floor		0	0	42	29	Floor	3	32	60		
15	Wall		3	-40	48	30	Floor	3	48	36		

Date Reviewed 4-26.00 RS Supervision.

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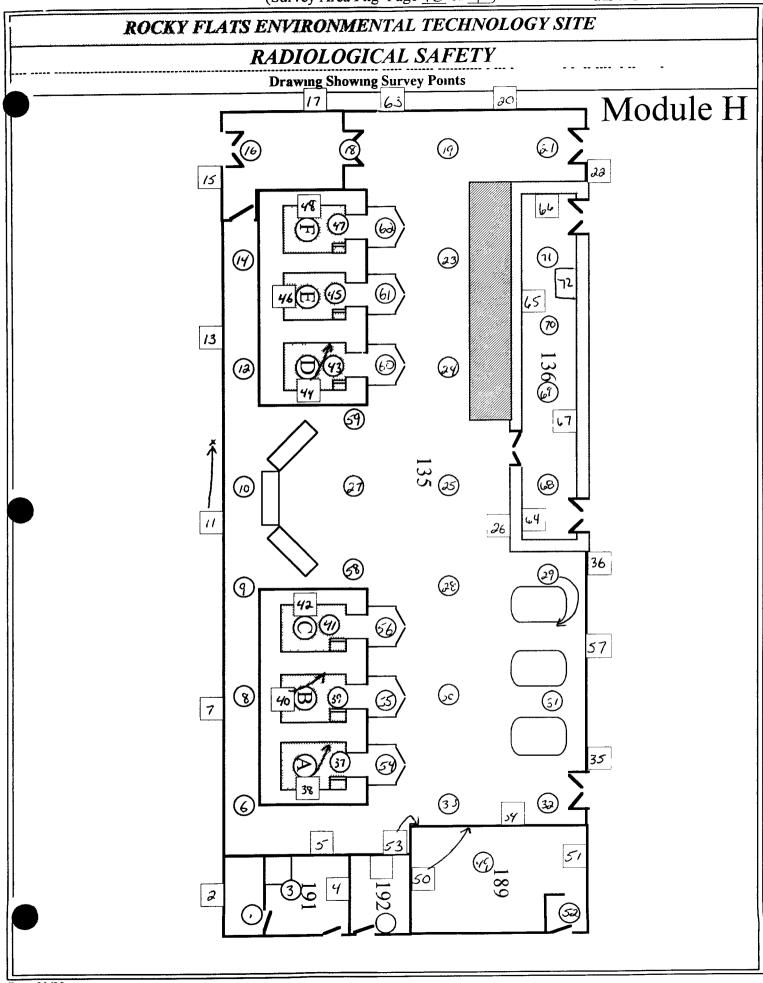
(Survey Area Pkg Page <u>9A</u> of <u>4</u>)

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing	Showing	Survey	Points
---------	---------	--------	--------

Drawing Showing Survey Points											
	Swipe #	Location\Description Removable Total Swipe Location\Description (Results in DPM/100cm ²) Alpha Beta Alpha # (Results in DPM/100cm ²)				Location\Description Removable Toto	- 1				
	31	Floor	3	24	66	61	Flog 3 20 9	6			
	32	F/oor	0	48	60	62	Floor 0 -32 10	8			
		Floni	3	36	30	63	wall 3 0 6	6			
		woll	3	-12	48	64	see note				
		nall	0	-12	24	65					
		wall	0	96	60	66					
	37	Floor	0	-20	180	67					
	38	wall	3	12	180	68					
	39	F/00i	0	20		69					
	40	wall	3	8	108	70					
	41	Floor	3	-12	48	71	see note				
	42	Wall	0	48	54	72	see note				
	43	Floor	0	-28	96	73	END OF SLRUEY N	4			
	44	wall	0	40	192	74					
	45		3	24	96	75					
	46	F/005 Wall	0	-80	78	76					
	47	Floor	3	-52	66	77					
	1	wall	3	4	72	78					
	- 1	F/001	0	-8	24	79					
	50	Wall	0	-44	6	80					
	51	~a//	0	-20	48	81					
	52	Floor	0	44	24	82					
		wall	0	60.	36	83					
		Flons			24						
	55	F/601		20		85					
	56	F/601	1	-16		86					
	57	F/601 Wall	0	8	48	87					
	58	Floor		-32		88					
I	59	Floor			30	89					
	60	F/005 F/005		52	30	90	NA				
ഥ											



SURVEY PACKAGE TRACKING FORM

Package ID • 99-0002		Building 707						
Survey Area: U		Survey Unit N/A						
Initiator/ Date	Release Date	Validation Date	Closure Date					
10/25/19	12/21/99	EM 6/14/00	EDM 6/14/60					
	V							
			-					
			-					

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	0002	Building. 707		Type 3					
Survey Area U		Survey Unit N/A	1	Area (m²) 891					
Survey Unit Description RBA ROOMS 167, 169, 173, 175, 179, 171, 180, 181, 181B, 181A, 181C, 182A, 182B, 182C, 183, 184A, 184, 185, 188**, 197, 194, 195, 193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS ROOM 188 IS A POSTED CA, BUT WAS GROUPED WITH THIS SURVEY AREA DUE TO LOCATION									
Survey Type·	1850-50								
RLC Survey X	FSS □		Class 1 □ Class	2 □ Class 3 □ U	J nknown X				
Random/Uniform Surface Activity Measurements	Random/Uniform Biased Surface Surface Activity Activity		Media Samples	Volumetric Samples	Surface Activity Scans				
93	50	30	3	0	103				
Building		Туре		Survey Area					
Survey Unit			Area (m²)						
Survey Unit Desc	cription		The second secon						
Survey Type·			Classification						
RLC Survey □	FSS □		Class 1 Class 2 Class 3 Unknown						
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans				
Building		Туре	Survey Area						
Survey Unit			Area (m²)						
Survey Unit Desc	cription								
Survey Type			Classification						
RLC Survey □	FSS □		Class 1 🗖 Class	J nknown 🗖					
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans				
Building		Туре:	Survey Area						
Survey Unit			Area (m²)						
Survey Unit Description									
Survey Type			Classification						
RLC Survey □ FSS □			Class 1 □ Class	2 □ Class 3 □ U	Jnknown □				
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans				

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Page Superceded \$ 3/16/00 Chg # 4 INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	ckage ID 99-0002 Building 707		Type 3		
Survey Area U Survey Unit N/A		\	Area (m ²) 891		
Survey Unit Description RBA ROOMS 167, 169, 173, 175, 179, 171, 180, 181, 181B, 181A, 181C, 182A, 182B, 182C, 183, 184A, 184, 185, 188**, 197, 194, 195, 193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ARE ROSTED AS FIXED CONTAMINATION AREAS ROOM 188 IS A POSTED CA, BUT WAS GROUPED WITH THIS SURVEY AREA DUE TO LOCATION				DIOLOGICAL	
Survey Type			Classification		
RLC Survey X	Aşs □		Class 1 □ Class 2 □ Class 3 □ Unknown X		Jnknown X
Random/Uniform Surface Activity Measurements	Brased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
275	275	60	3	0	300
Building		Туре		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Desc	cription				
Survey Type			Classification		
RLC Survey □	FSS □		Class 1 Class :	2 □ Class 3 □ U	Jnknown □
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building Type			Survey Area		
Survey Unit		Area (m²)			
Survey Unit Description					
Survey Type			Classification		
RLC Survey □	FSS □		Class 1 🔼 Class		Jnknown □
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building Type		Survey Area			
Survey Unit		Area (m ²)			
Survey Unit Description					
Survey Type		Classification			
RLC Survey □	FSS □		Class 1 □ Class 2 □ Class 3 □ Unknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building 707		
Survey Area: U	Survey Unit: N/A		
Survey Unit Description: RBA ROOMS 167, 169, 182B, 182C, 183, 184A, 184, 185, 188**, 197, 194, 195, AREAS ARE POSTED AS FIXED CONTAMINATION GROUPED WITH THIS SURVEY AREA DUE TO LOC	193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ROOM 188 IS A POSTED CA, AND WAS		
Building Information:			
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey 🗆		
Building Type Type 1 🗆 Type 2 🗖 Type 3 X			
Classification Class 1 🗆 Class 2 🗖 Class 3 🗎 Un	known X		
Contaminants of Concern Plutonium X Uranium X	Other 🗆		
Justification for Classification: N/A			
Special Support Requirements: Ladder, mania instrumentation may be required for access into			
- · · · · · · · · · · · · · · · · · · ·	Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads		
Isolation Controls:			
Level 1 □ Level 2 □ N/A X			
Labeling Requirements: NONE			
Survey Package Implementation:			
Survey 1 workings 1 impromote the control of the co	<u> </u>		

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Package ID: 99-0002	Building 707
Survey Area: U	Survey Unit N/A

Survey Unit Description: RBA ROOMS 167, 169, 173, 175, 179, 171, 180, 181, 181B, 181A, 181C, 182A, 182B, 182C, 183, 184A, 184, 185, 188**, 197, 194, 195, 193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS ROOM 188 IS A POSTED CA, BUT WAS GROUPED WITH THIS SURVEY AREA DUE TO LOCATION

	Minimum Survey/Sampling Measure	ment Requirements
Aeasurement	Number and Type	Comments
rface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1
easurements	93 unbiased survey points uniformly distributed	SEE NOTE 2
	within the survey area	SEE NOTE 3
	10 biased survey points at the following locations	SEE NOTE 4
	- points near areas with potential for contamination, including doorways/walkways/main throughfares	
	- other areas based on RCT judgement	
	CEILINGS/WALLS > 2 meters	
	40 biased survey points with focus on following areas	
	- Walls behind process lines	
	- Ceilings above GB's/Hoods/B-Boxes	
	- Ceilings/walls adjacent to c-cells/tents	
	- Stained or discolored areas	
	- Areas around pipe or other penetrations	
	EQUIPMENT	
	30 biased survey points on equipment with focus on the following types of areas/locations	
	- Gloveboxes/Hoods/B-Boxes or other equipment which have visible leaks, stains, or spills beneath them	
	- Exhaust ducts	
	- Analytical/process/repack equipment	
	- Permanent storage racks for tools	
	- Survey points on top of overhead piping (where locations are accessible through reach tools)	

Package ID: 99-0002

Building 707

Survey Area: U

Survey Unit N/A

Survey Unit Description: RBA ROOMS 167, 169, 173, 175, 179, 171, 180, 181, 181B, 181A, 181C, 182A, 182B, 182C, 183, 184A, 184, 185, 188**, 197, 194, 195, 193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS ROOM 188 IS A POSTED CA, BUT WAS GROUPED WITH THIS SURVEY AREA DUE TO DOCATION

Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1
Measurements	275 unbiased survey points uniformly distributed	SEE NOTE 2
	within each room, taken as follows	SEE NOTE 3
	- 11 survey points per room (3 floor/2 wall)	SEE NOTE 4
	25 biased survey points at the following locations	
	- 1 point in each room as determined by RCT	
	CEILINGS/WALLS > 2 meters	
	250 biased surveys (2/wall, 2/ceiling) with focus on following areas	
	- Walls behind process lines	
	- Ceilings above GB's/Hoods/B-Boxes	
	- Ceilings/walls adjacent to c-cells/tents	
	- Stained or discolored areas	
	- Areas around pipe or other penetrations	
	EQUIPMENT	
	60 biased survey points on equipment with two or more samples per room with focus on the following types of areas	
	- Gloveboxes/Hoods/B-Boxes or other equipment which have visible leaks, stains, or spills beneath them	
	- Exhaust ducts	
	- Analytical/process/repack equipment	
	- Storage racks for tools	
	- 5 survey points on top of overhead piping	
	(where locations are accessible through reach tools)	

PAGE 5 PAGE 5 PAGE 5 SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package IN: 99-0002		Building 707	
Survey Area: U		Survey Unit N/A	
Survey Unit Description: RBA ROOMS 167, 169, 173, 175, 179, 171, 180, 181, 181B, 181A, 181C, 182A, 182B, 182C, 183, 184A, 184, 185, 188**, 197, 194, 195, 193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS ROOM 188 IS A POSTED CA, BUT WAS GROUPED WITH THIS SURVEY AREA DUE TO LOCATION			ING 707 RADIOLOGICAL AREAS ARE
	Minimum Survey/Sampling	Measurer	nent Requirements
Measurement	Number and Type		Comments
Surface Scanning	FLOORS/WALLS < 2 meters 300 1 m ² surface scans shall be taken a location identified for surface activity measurements. Locations found to be DCGL will be noted. CEILINGS/WALLS > 2 meters. NO EQUIPMENT. NONE.	above the	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 3 biased (paint) media sample follows - 1 sample near contaminated scale 196 - 1 sample near a process drain - 1 sample collected from the tool of 188)	no room	SEE NOTE 5
Volumetric Samples	NONE		
Isotopic Gamma Scans	NONE		

Package ID· 99-0002	Building 707
Survey Area: U	Survey Unit N/A

Survey Unit Description: RBA ROOMS 167, 169, 173, 175, 179, 171, 180, 181, 181B, 181A, 181C, 182A, 182B, 182C, 183, 184A, 184, 185, 188**, 197, 194, 195, 193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS ROOM 188 IS A POSTED CA, BUT WAS GROUPED WITH THIS SURVEY AREA DUE TO LOCATION

Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 103 1 m ² surface scans shall be taken at each location identified for surface activity measurements Locations found to be above the DCGL will be noted CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 3 biased (paint) media samples taken as follows - 1 sample near contaminated scale in room 196 - 1 sample near a process drain - 1 sample collected from the tool crib (room 188)	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Package ID: 99-0002	Building 707
Survey Area: U	Survey Unit N/A

Survey Unit Description* RBA ROOMS 167, 169, 173, 175, 179, 171, 180, 181, 181B, 181A, 181C, 182A, 182B, 182C, 183, 184A, 184, 185, 188**, 197, 194, 195, 193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS ROOM 188 IS A POSTED CA, BUT WAS GROUPED WITH THIS SURVEY AREA DUE TO LOCATION

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alaha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct confamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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Package ID: 99-0002	Building 707
Survey Area: U	Survey Unit N/A

Survey Unit Description: RBA ROOMS 167, 169, 173, 175, 179, 171, 180, 181, 181B, 181A, 181C, 182A, 182B, 182C, 183, 184A, 184, 185, 188**, 197, 194, 195, 193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS ROOM 188 IS A POSTED CA, BUT WAS GROUPED WITH THIS SURVEY AREA DUE TO LOCATION

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling
 If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting
 the media sample
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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Package ID: 99 0002	Building 707
Survey Area: U	Survey Unit N/A

Survey Unit Description. RBA ROOMS 167, 169, 173, 175, 179, 171 180 181, 181B, 181A, 181C 182A 182B 182C, 183, 184A, 184, 185, 188**, 197, 194, 195, 193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS ROOM 188 IS A POSTED CA, BUT WAS GROUPED WITH THIS SURVEY AREA DUE TO LOCATION

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Oue to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e g, indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following doding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building 707
Survey Area: U	Survey Unit N/A

Survey Unit Description • RBA ROOMS 167, 169, 173, 175 179, 171, 180 181 181B, 181A 181C, 182A 182B, 182C 183 184A, 184, 185, 188**, 197, 194, 195, 193, 196A, 196 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS ROOM 188 IS A POSTED CA, BUT WAS GROUPED WITH THIS SURVEY AREA DUE TO LOCATION

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos.
- 4- Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e g, indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc)

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SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID.	99-0002	Building 707		
Survey Area.	. U	Survey Unit N/A		
Change #	Description		Initiator/ Date	PRE
	Added page GA		12/21/99	Alex
_2	Deleted pet to ditte	TRAN & MENS	12/12/18	ALE Y
2	Teplace of pa 6 to dela	te B' Refo	On of you	HISE W
3	Replaced on 60 w/e	ovsed a	Caralista	1005
4	Replaced ggs 1 2, 4, 5 due to	and ust next resuct	VM osholao	ALS .
5	REPLACED pg 9 w/ pgs	9-9K	de 4/27/00	Earl
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			+	
				
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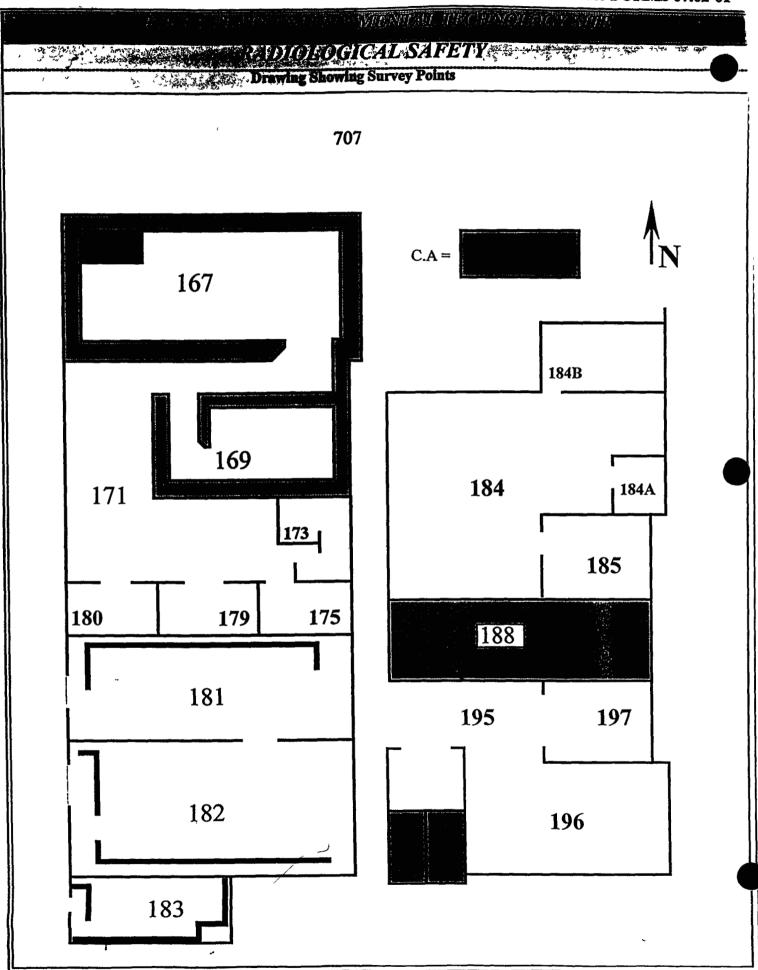
SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Bu	ilding 707	
Survey Area: U	Su	vey Unit N/A	
Survey Type: Reconnaissance Level Characterizati	on Surve	y X Final Status Surve	ey □
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys		S	do
Total Activity Surveys		A	d -
Exposure Rate Surveys		NA	NA
Removable Surveys		J	do
Media Samples		BES	KIM
Volumetric Samples		NA	NA
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys		1	do
Total Activity Surveys		A	do
Exposure Rate Surveys		NA	NA
Removable Surveys		J	b
Media Samples		QU.	Em
Volumetric Samples		NA	NA
Comments	<u>.</u>		
			<u>Z'</u>

				NVERNITALE, THE	COFINELL, OLC	ar Sitte ,	
	I	NSTRUMENT I	ATA				
м	fg.	Mfg		Survey Tv	pe:		
	odel	Model	Model	Building.			
	rial#	Serial #	Serial #	Location*		***	
	al Due	Cal Due	Cal Due				
	(g	Bkg					
Ef	ficiency	Efficiency	Efficiency	RWP#			
	DA	MDX	MDA				
^'`						Time	
∥м	fg	Mfg.	Mfg				
М	odel	Model	Model	RCT	/	•	/
	erial #	Serial #	Serial #		rint name	Signatui	re Emp#
	al Due	Cal Due	Cal Due			J	•
B	kg	Bkg.	Bkg	RCT			
E	ficiency	Efficiency	Efficiency	P	rint name	Signatui	re Emp#
	DA	MDA	MDQA				
	RL#:omments						
	REMOVABLE Alpha DPM/100 cm² 1. 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21. 22		DIRECT DIRECT Alpha Beta DPM/100 cm² DPM/100	Alpha	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²
	23 24			48 49			
	25			50			
E	ate Reviewed:	RS	Supervision:	Print Name	1	Signature	/ Emp #

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Rev. 05/98

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

IN	STRUMENT DATA	
fg Eberline	Mfg Eberline	Mfg NeTech
odel Sac-4	Model Sac-4	Model_Electra
Serial # 949	Serial #_ 837	Serial #_15/8
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-∞</u>	Cal Due 6-29 00
Bkg Os con	Bkg OU COM	Bkg 20 com
Efficiency_33%_	Efficiency 33%	Efficiency 17%
MDA 156 dpm	MDA 82 dom	MDA 94 dpm
Mfg Eberline	Mfg Eberline	Mfg
Model BC-4	Model_BC-4_	Model_\
Serial # 872	Serial #_ 833	Serial #
Cal Due <u>4-12-00</u>	Cal Due 7-14-00	Cal Due NA
Bkg 64 cpm	Bkg 62 spm	Bkg /\
Efficiency 25%	Efficiency 25%	Efficiency
MDA 1213600	MDA 119.5 dan	MDA
	/ Walls < 2 meters	Unbiased survey

Survey	Гуре _	Conta	minatio	n	
Building	707				
Location	RBA	Rooms		Survey Area U	1
Purpose	Reco	nnaisan	ce Level	Characterization	_
RWP#	0	0-70	77 -10	204	_
Data	3-2	(- OO	Т	1630	
Date _	001		_ ime	7630	-

Comments Floor / Walls < 2 meters Unbiased survey points

1 m² scans, 1 minute pats and swipes. See map for locations
3 b kg/c Courts alpha 48 cpm (electra

SURVEY RESULTS

		,							
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	Floor	0	-56	12	16	Flori	0	-28	18
2	Floor	0	-48	-6	17	wall	0	-60	18
3	Floor	3	36	36	18	wall	0	-48	30
4	Vall	0	-48	-6	19	Floor wall	3	-44	12
5	Wall	3	-20	12	20	Floor	0	-8	48
6	F/60 r	6	-16	30	21	F/005	0	-28	24
7	Floor	0	4	0	22	F/00;	0	-56	60
8	wall	0	-%	12	23	wall	0	- 8	48
	Wall	0	-36	12	24	wall	0	-60	48
10	FLOOT Wall	0	28	0	25	Flor	3	-60	36
11	Flor	0	-20	24	26	Fhar	\circ	-/6	42
12	Fhos	0	-20	12	27	wall	0	-8	54
13	Wall	0	-64	54	28	Floor	0	-36	24
14	F/oor	0	-68	24	29	wall	0	-96	24
5	Floor	0	-32	6	30	Flour	0	56	30

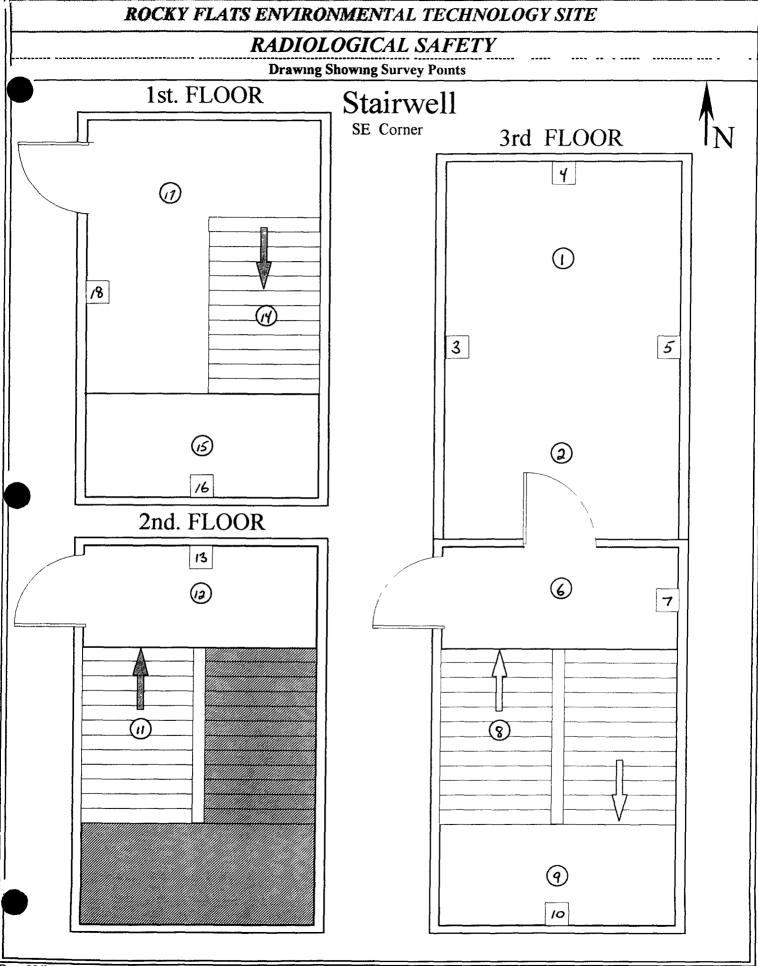
Date Reviewed. 43 00 RS Supervision

(Survey Area Pkg Page 4A of 4) RS FORMS 07.02-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE														
	RADIOLOGICAL SAFETY													
		Drav	ving Sł			y Points								
ip #	e Location\Description (Results in DPM/100cm ²)	Rer Alph	novable a Beta	Total		Location\Description (Results in DPM/100cm ²)	Ren Alpha	novable Beta	Total Alpha					
31	Fhor	0	-92	24	61	Floor	0	-50	18					
32	wall	3	-36	66	62	wa//	0	-44	36					
33	Floor	0	-68	554	63	Floor	0	-112	0					
34	Floor	0	-32	30	64	Woll	0	-68	18					
35	wall	0	-12	12	65	F/cor	0	-56	6					
36	Floor	0	-4	36	66	Wall	0	-40	0					
37	Floor	0	64	96	67	Floor	0	-56	12					
38	woll	0	-6C	48	68	Wall	0	-12	30					
39	Floor	0	-52	36	69.	Floor	0	8	- 18					
40	Floor	0	-8	0	70	Fpor	0	0	36					
41	Wall	0	-80	12	71	well	0	-52	18					
42.	wall	0	-40	18	72.	will	0	44	6					
3	wall	0	-44	0	73	Well	3	0	-18					
4	wall	0	-12	18	74	Flasi	6	4	30					
45	Wall	0	-56	24	75	woll	3	-40	18					
46	Floor	0	-68	18	76	END OF SURVEY								
47	Floor	0	-/6	30	77									
48	Floor	3	-40	6	75									
49	Floor	0	-44	$\overline{}$	79									
50	Floor	0	-28	36	80									
51	Floor	0	-24	36	81									
52	Floor	0	-28	48	82									
53	Wall	3	-64	0	83	N/A			[
54	Wall		-16	30	84									
55	wall	3	24	48	85									
	Floor	0	4	36	86									
57 8	Flor	0	-64	6	87									
- 1	Floor	0	-8	/8	88									
59.	Wall		-40		89									
60 Rev	Wall	0	-76	24	90	/								

(Survey Area Pkg Page 9 of 9) RS FORMS 07.02-01 **ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE** RADIOLOGICAL SAFETY **Drawing Showing Survey Points** 707 RBA ROOMS 167 53 (T) 184B Q3 48) 169 59 (21) (B) 184A /3 (4) (g) 4 | 195 36) 3 31) 39) 30)

	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE												
		STRUMENT DA				.) ~	vey Type Contamination	nn					
_	Eberline	Mfg Eberline	_	g NeT			7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	<u> </u>		u			
	el Sac-4	Model Sac-4	-	del Elec			tion South Corr. 3-20	-w Surv	ev Are				
	al # <u>879</u>	Serial # 837	. Ser	1al # <u>/</u>	<u>-29.00</u>	Purn	Reconnaisance Level	Charac	terizati	ion 3			
	Due <u>4-/0-00</u>	Bkg 04 com		3 <u>/0</u>		Tup	JSC						
-	0 6 con enercy 33%	Efficiency 33%		iciency_	•	RW	P# 00-707 -120	<i>24</i>					
18	A 163 dpn	MDA 148 dpm		A 94		Date	e <u>3-/6 00</u> Time	163	0				
Mfg	Eberline	Mfg Eberline	Mf	g		Date	7 78 CC 1mc						
Mod	iel BC-4	Model BC-4	Mo	del						1			
Seri	al # <u>872</u>	Serial # 833		1al #\	/								
		Cal Due 7 14-00		Due _	XA _								
		Bkg 50 spm	_	3	\								
		Efficiency 25%	-	iciency_	-+								
		MDA 108.4 dom				L							
		/ Walls < 2 meter											
		inute pats and sw	ipes	see ma	sp ior l		(0,0,2)						
	Drigor Col	ints alpha		u ya		o cpi	n (0,0,2)						
				<u>su</u>	RVEY	RESU	<u>LTS</u>						
Swipe	Location\Desc (Results in DPM	ription	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha			
	(Results in DPM	/100cm²)		 	 	 	.,	 	1	 			
1.	Floor		0	-88	/8	16	wall	10	32	30			
2	Floor		0	12	12	17	F/oor	-	-4	48			
3.	wall		0	4	24	18	wall	0	84	54			
4.	Wall		0	16	24	19	END of Survey		ļ				
5	Wall		0	28	42	20	/						
	F/oor		0	-4	12	21							
	Wall		3	4	6	22							
	Floor		0	48	24	_23		/					
	F/bor		6	-4	30	24	/	1					
	Wall		0	16	42	25	NA						
	F/00r		3	-20	54	26	/ /	1					
			3	64	36	27		1	 				
	Floor		0	4	42	28		1					
1 (Wall		0	0	30								
14. 15	F/005 F/005		3	-20		<u>29</u> 30							
						JU							
Date	Reviewed: 2	16.00 RS St	apervis	ion:		IIII NZI	ne Šignature			π			



Rev 02/00

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	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE													
_	INS	TRUMENT DAT	`A		<u></u>									
'fg	Eberline	Mfg Eberline		g NeT	ech	Sur	vey Type Contamination	1						
(od	el Sac-4	Model Sac-4	Мо	del_Elec	tra	Build	•							
Seria	1#_849	Serial # 837	Ser	ıal # <u></u> ¿	233	Loca	uon RBA Rooms		ey Area					
Cal I	Due 4-10-00	Cal Due <u>5-17 00</u>	Cal	Due <u>5</u>	-11-00	Purp	ose Reconnaisance Level (Charact	erizati	on				
Bkg		Bkg O.zcpm		<u>ვ_ვ</u> ა	cpm		n	n Cu						
Effic	iency 33%	Efficiency 33%	Eff	iciency_	17%	RW	P# 00 -707 - 120	J 4						
MDA	1 13.9 opm	MDA 12.9 DPm	MD)A <u>9</u> 4	t dpm	Date	= 3-24-00 Time _	163	0					
Mfg		Mfg Eberline	Mf			<u>l</u>	//							
It	Model BC-4 Model Serial # 872 Serial # 833 Serial #													
Serial # 872 Serial # 833 Serial #														
Cal Due <u>4-12-00</u> Cal Due <u>7-14-00</u> Cal Due <u>MA</u> Bkg <u>63 cem</u> Bkg <u>54 cem</u> Bkg														
Bkg 63 cem Bkg 54 cem Bkg Efficiency 25% Efficiency 25% Efficiency														
	Efficiency 25% Efficiency 25% Efficiency MDA UZO14 DPM MDA MDA													
MDA 120.4 DPm MDA 112.3 DPm MDA Comments Floor / Walls < 2 meters Biased survey points														
1 -2	1 m ² scans, 1 minute pats and swipes See map for locations 3 bkm/ Count of a long little 480000													
	3 bkgd counts alpha lettra < 8cpm													
SURVEY RESULTS														
Swipe	Location\Descri	iption		ovable	Total	Swipe	Location\Description		vable	Total				
#	(Results in DPM/1	100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha				
1	Floor by	SCALE	9	-15	30	16		ļ						
2	Floor		0	32	54	17		ļ						
3	Floor		0	16	30	18								
4	Floor		0	84	42	19				[
5	Floor		3	-40	0	20								
6	Floor		0	64	18	21								
7	Floor		9	68	24.	22								
8	Floor		3	28	18	23	NA							
9	Floor		3	4	24	24								
10	Floor		0	-28	24	25								
11		of survey				26								
12						27								
13		N	A			28								
14						29								
5						30	/							
Date	Reviewed 4	1.3-00 RS Si	ipervisi	ion										
				- · ·	Pri	ınt Nan	ne Signature		Emp#					

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points** 707 CAL GAMMA / SHIPPING **(8)** C A = 184B 184A

 $\int_{Q}^{\text{Rev }02/00}$

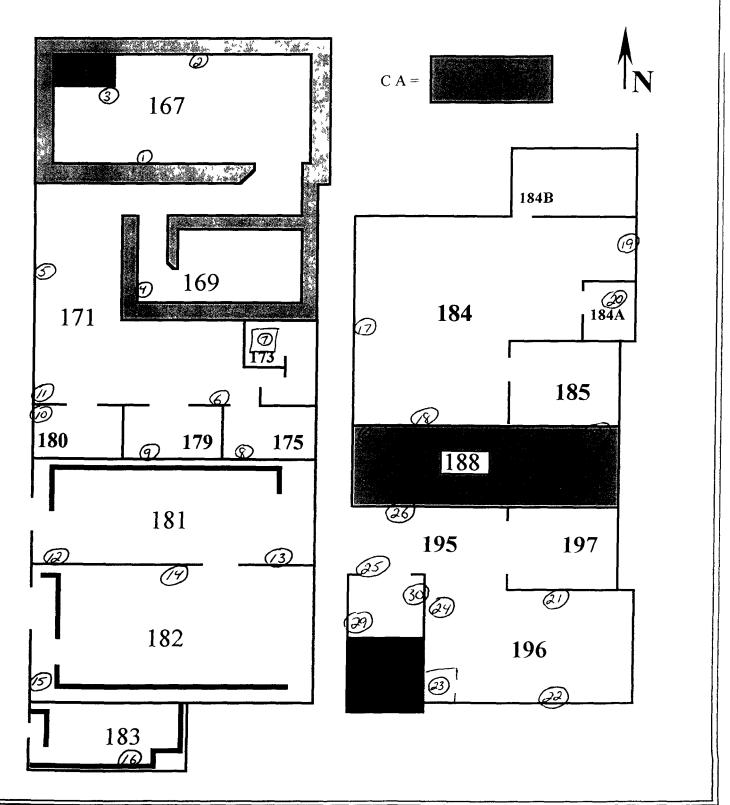
		NOCKY JES	NS E	NVIR	ONIA	ENT	AL TECHNOLOGY SITI	E		:			
		STRUMENT DAT				-7	Contomination						
Mfg		Mfg Eberline	_	g NeT			vey Type Contamination	1					
	el Sac-4	Model Sac-4	-	del <u>Elec</u>			$\frac{1}{1}$ $\frac{1}$	C	~.ov. A =	/ /			
	1#_849	Serial # 837	-	nal #/:		Purpo			rvey Ar				
	Due <u>4-10-00</u>	Cal Due <u>5-/7-00</u>		Due <u>6</u>		Fulpe	ose recommusance bever						
	05 com mency 33%	Efficiency 33%	_ DA	g <u>20</u> iciency,		RW	P# 00 707 -120	74					
3	156 dpm	MDA /39 don)A <u>94</u>					_				
	·	•			p	Date	e <u>3-22-00</u> Time _	1630	<u> </u>				
Mfg		Mfg Eberline	_ Mf	- —		1							
	lel BC-4	Model BC-4	•	del		RC7	Print name Signate	<u> </u>					
	al # <u>872</u> Due <u>4-12-00</u>	Serial # 833 Cal Due 7-14-00	•	nal # Due _/	$\frac{1}{2}$		Print name Signata	ire	/				
	59 cpm	Bkg <u>55 cpm</u>			/			_					
	ciency 25%	Efficiency 25%		iciency	- +	RCT		faren .					
	A 116.9 don				$\overline{}$		Print name // Signatu	16	/				
		ment Biased su				_ L							
					ons								
	1 minute pats and swipes See map for locations 3 b kg/ Counts alpha llatra < 8 cpm												
	- SERVIN COMMAS CAPTURE & SCAPTURE												
	SURVEY RESULTS												
Swipe #	Location\Desc (Results in DPM		Rem Alpha	ovable Beta	Total Alpha	Swipe	Location\Description (Results in DPM/100cm ²)	Rem Alpha	novable Beta	Total Alpha			
<u>"</u>	grigas or	100cm-)	┝╌┷		1		(Results in Dr W 100cm-)	+	 	<u> </u>			
$\frac{1}{2}$	Jant sto	rage rack	0	12	54	16	Vent	10	56	30			
2	Vent		0	-8	90	17	vent	3	0	6			
3	Pipe		0	-36	18	18	Vent	3	88	18			
4	vent		0	8	54	19	Vent	0	16	66			
5	vent		0	-36	120	20	Pipes	3	-36	0			
6	Vent		3	-24	84	21	vent	0	-20	102			
7	Box		0	16	18	22	Vent	3	-4	252			
8	Vent		0	-28	120	23	Pacs	0	28	30			
9	Vent		0	-40	48	24	scale	0	-40	42			
10			0	-/6	18	25	Doors	0	16	60			
11	Vent		3	28	72	26	Vent	0	56	66			
12	Vent	······································	3	0	0	27	vent	3	-28	 			
13	Vevt		3	20	18	28	Vent	0	28	102			
	VENT		3	-36	60	29	Elevator	3	-40	/8			
	Vent		3	-32	18	30	Elevator	0	-28	6			
		1.2.AA			C //	11.	1/6/ N/X/						
Date	Reviewed 4	<i>L3.00</i> RS Su	ipervis	ion	<u>ン火(</u> Pri	nt Nan	le Signature	-		-			

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

707 CAL GAMMA / SHIPPING



(Survey Aren Pky Page 4I of 4) RS FORMS 07.02-01

	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE INSTRUMENT DATA												
IL	~~~~~~ ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~) a	vey Type Contaminatio						
_	Eberline del Sac-4	Mfg Eberline Model Sac-4	_	fg Ne			· · · · · · · · · · · · · · · · · · ·	Щ					
	al # 849	Serial # 837	_	odel <u>Ele</u> rial#/		•	ding 707	Surv	ey Area	11			
	Due <u>4-10-00</u>	Cal Due 5-17 00	_				ose Reconnaisance Level						
	03 cpm	Bkg o 2 cpm		g <u>30</u>		1		/					
Effi	ciency 33%	Efficiency 33%	_ Eff	ficiency	17%	RW	TP# 00-707-1204	<i>,</i>					
MD.	A 139 dam	MDA 129 dam	_ MI	DA <u>99</u>	dom	Dat	e <u>3-24-00</u> Time	1630	0				
Mfg		Mfg Eberline	_	g <u> </u>									
	del BC-4	Model BC-4	_	odel		R							
	al # <u>872</u> Due <u>4-12-00</u>	Serial # 833 Cal Due 7/4-00	_	nal #\ I Due 🔺	\								
22	63 cpm	Bkg 54 com			*								
	ciency 25%	Efficiency 25%	_	iciency_	$\overline{\bot}$	RO							
MD	A 1204 dpm	MDA 112 3 der		DA		<u> </u>							
		g / Walls > 2 met				points							
1		nd swipes See i				- 0							
	3 bkgd Counts alpha electra 28cpm												
				SU	RVEY	RESU	LT <u>S</u>						
Swipe		nption	Rem Alpha	ovable Beta	Total	Swipe			ovable	Total			
	(Results in DPM/	100cm²)	 	 	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha			
	Wall		0	-84	42	16	wall	3	60	12			
	Wall		0	-/6	12	17	Well	6	7/00				
3			6	36	18	18	Wall	3_	36	6			
	Wall		0	/6	-6	19	Cerline	10	-20				
. 1	Wall		0	-48		20	Ceiline	10	-28	30			
	Wall		0	-28	18	21	Ceiling	0	28	0			
•	wall		0	36	66	22	Certiny	0	8	6			
8	Wall		0	20	24	23	Cerling Cerling	0	-28	18			
9	Wall		3	8	18	24	Cerlina	0	24	30			
10	Wall		0	-36	0	25	Cerline	0	0	6			
11	Wall		0	28	60	26		0	-28	42			
12	Wall		0	4	72	27	Ceiling	3	16	24			
13	13 Wall 0 56					28	Certine,	0	12	12			
14	wall		0	36	30	29	Cerpin	0	-4	18			
	Wall		0	44	0	30	Ce, Inc	0	20	60			
Date	Reviewed.	.3 00 RS Su	pervisi	on .									

(Survey Aren Pkg Rge 43 of 4) RS FORMS 07.02-01

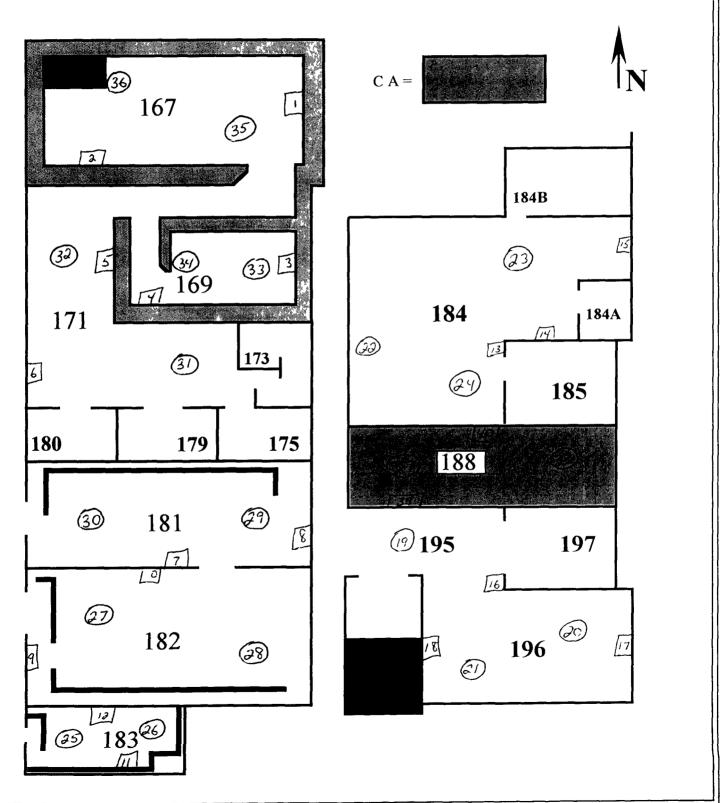
	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE												
	R	ADI	OLO	OGIC	AL S	SAFETY							
						Points	T						
ipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	vable Beta	Total Alpha		Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha				
31	Ce,/ing	3	-56	0	61			<u> </u>	<u> </u>				
32	Co, ling	3	8	0	62			ļ					
33	(e1/10g	6	-20	-12	63								
34	Cei/in	0	-32	-18	64								
35	Ce, /in,	0	0	42	65								
36	Ce, line	0	8	24	66								
37	Ce, line	0	-32	0	67								
38	Cerling	0	-32	0	68								
39	wall	0	-36	6	69								
40	Wall	3	<u>-52</u>	0	70								
41	End of Survey				71								
42	J				72								
3					73		<u> </u>						
44					74								
45					75	Λ(\"							
46					76								
47					77								
48					75								
49					79								
50					80								
51					81								
52	11				82								
53					83		\						
54					84		\perp						
55		$\overline{\lambda}$			85		_\						
56					86		}	\					
57			$\downarrow \downarrow$		87			$\downarrow \downarrow$					
8					88			\perp					
59				$\downarrow \downarrow$	89			\					
60					90				7				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

707 CAL GAMMA / SHIPPING



Rev 02/00

SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002		Building 707		
Survey Area· V		Survey Unit N/A		
Initiator/ Date	Release Date	Validation Date	Closure Date	
A 19/25/99	क्षा भ्रमीवव	Earl 6/14/00	RM 6/14/00	
<i>y</i> '	J U T			

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	99-0002 Building 707			Type 3		
Survey Area V		Survey Unit N/A		Area (m ²) 921		
NE CORNER AND	Survey Unit Description CORRIDORS H, J, K, L, S, T, U, V NORTH ENDS OF CORRIDORS F AND G FROM TH NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY TO CORRIDOR H ROOMS 164, 166, 170 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS					
Survey Type			Classification			
RLC Survey X	FSS 🗆		Class 1 Class	2 □ Class 3 □ U	Jnknown X	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
110	108	30	3	0	120	
Building		Туре		Survey Area	Survey Area	
Survey Unit		· _ · · · · · · · · · · · · · · · · · ·	Area (m²)			
Survey Unit Desc	cription					
Survey Type		Classification				
RLC Survey □	FSS □		Class 1 □ Class 2 □ Class 3 □ Unknown □		J nknown 🗆	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building Type			Survey Area			
Survey Unit Area (m ²)						
Survey Unit Description						
Survey Type	Survey Type Classification					
RLC Survey □	FSS 🗆		Class 1 🗆 Class	2 □ Class 3 □ U	J nknown □	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building		Туре		Survey Area	<u> </u>	
Survey Unit		Area (m²)				
Survey Unit Desc	cription					
Survey Type C			Classification			
RLC Survey □	FSS □		Class 1 □ Class 2 □ Class 3 □ Unknown □			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707			
Survey Area: V	Survey Unit· N/A			
G FROM THE NE CORNER AND NW CORNER	Survey Unit Description: CORRIDORS H, J, K, L, S, T, U, V NORTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY TO CORRIDOR H ROOMS 164, 166, 170 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS			
Building Information:				
Survey Type Reconnaissance Level Characterizat	tion Survey X Final Status Survey			
Building Type Type 1 Type 2 Type 3 X				
Classification Class 1 🗆 Class 2 🗖 Class 3 🗖	Unknown X			
Contaminants of Concern Plutonium X Uraniun	m Other			
Justification for Classification: N/A				
<u> </u>	nanlift, scaffolding, and/or remote reach tools and into overhead areas – use caution in overheads			
Special Safety Precautions: Access to over Review RWP requirements and surveys prior overheads	erhead areas may require additional controls or to entry Use caution when working in			
Isolation Controls:				
Level 1 🗖 Level 2 🗖 N/A X				
Labeling Requirements: NONE				
Survey Package Implementation:				
	C MA			
	9			
	<u>7</u>			
	<u>.</u>			
RESS Manager Printed Name Employee #	RESS Manager Signature Date			

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Package ID: 99-0002	Building: 707		
Survey Area · V Survey Unit N/A			
Survey Unit Description CORRIDORS H, J, K, L, S, T, U, V NORTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY TO CORRIDOR H ROOMS 164, 166, 170 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS			

AREAS				
Management	Survey/Sample	na Maaguram	ant Daguero	

Measurement	Number and Type	Comments
Surface Activity Measurements	FLOORS/WALLS < 2 meters 110 unbiased survey points uniformly distributed throughout the specified corridors (3 per floor, 2 per wall section – module walls to be treated separately For rooms 164, 166, and 170 take 3 per floor & 2 per wall	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
	10 biased survey points at the following locations 1 point near 2 of the 4 doors on each module adjacent to the corridors	
	CEILINGS/WALLS > 2 meters	
	98 biased surveys with focus on following areas	
	- Ceilings/walls adjacent to storage vaults	
	- Stained or discolored areas	
	- Areas around pipe or other penetrations	
	EQUIPMENT 30 biased survey points on equipment with one or more samples from	
	- Surveys points at exhaust ducts in corridors	
	- Survey points on top of overhead piping (where locations are accessible through reach tools)	
	- Survey points where pipes/equipment penetrate dropped ceilings (where present)	
	- Other equipment as determined by RCT	

Package ID: 99-0002	Building 707
Survey Area V	Survey Unit: N/A

Survey Unit Description. CORRIDORS H, J, K, L, S, T, U, V NORTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY TO CORRIDOR H AND ROOMS 164, 166, 170 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Surface Scanning FLOORS/WALLS < 2 meters 120 1 m² surface scans shall be taken at each location identified for surface activity measurements Locations found to be above the DCGL will be noted CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE SEE NOTE 4 Media Samples Total of 3 biased (paint) media samples taken as follows 1 sample each near an entrance (determined by RCT) to two modules (2 samples total) 1 sample near an eyewash station or other floor drain 1 sample near an eyewash station or other floor floor floor floor floor floor floor floor floor floor floor		Minimum Survey/Sampling Measure	ment Requirements
120 1 m² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted CEILINGS/WALLS > 2 meters. NONE EQUIPMENT. NONE Total of 3 biased (paint) media samples taken as follows - 1 sample each near an entrance (determined by RCT) to two modules (2 samples total) - 1 sample near an eyewash station or other	1easurement	Number and Type	Comments
location identified for surface activity measurements Locations found to be above the DCGL will be noted CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE Total of 3 biased (paint) media samples taken as follows - 1 sample each near an entrance (determined by RCT) to two modules (2 samples total) - 1 sample near an eyewash station or other	rface Scanning	FLOORS/WALLS < 2 meters	SEE NOTE 1
measurements Locations found to be above the DCGL will be noted CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE Total of 3 biased (paint) media samples taken as follows - 1 sample each near an entrance (determined by RCT) to two modules (2 samples total) - 1 sample near an eyewash station or other		120 1 m ² surface scans shall be taken at each	SEE NOTE 2
DCGL will be noted CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE Total of 3 biased (paint) media samples taken as follows - 1 sample each near an entrance (determined by RCT) to two modules (2 samples total) - 1 sample near an eyewash station or other		measurements Locations found to be above the	SEE NOTE 3
Media Samples Total of 3 biased (paint) media samples taken as follows 1 sample each near an entrance (determined by RCT) to two modules (2 samples total) 1 sample near an eyewash station or other			SEE NOTE 4
Total of 3 biased (paint) media samples taken as follows - 1 sample each near an entrance (determined by RCT) to two modules (2 samples total) - 1 sample near an eyewash station or other		CEILINGS/WALLS > 2 meters NONE	
follows - 1 sample each near an entrance (determined by RCT) to two modules (2 samples total) - 1 sample near an eyewash station or other		EQUIPMENT NONE	
 by RCT) to two modules (2 samples total) - 1 sample near an eyewash station or other 	edia Samples	follows	SEE NOTE 5
- 1 sample near an eyewash station or other		- 1 sample each near an entrance (determined by RCT) to two modules (2 samples total)	
VI VOVE	1	NOVE	
olumetric NONE amples		NONE	
sotopic Gamma NONE	topic Gamma	NONE	
Scans			

RSFORMS-16 01-8

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FOR (cont)

Package ID: 99-0002	Building 707
Survey Area: V	Survey Unit N/A

Survey Unit Description: CORRIDORS H, J, K, L, S, T, U, V NORTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY TO CORRIDOR H AND ROOMS 164, 166, 170 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

NOTE 1. Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-230, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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Package ID: 99-0002	Building 707
Survey Area: V	Survey Unit N/A

Survey Unit Description. CORRIDORS H, J, K, L, S, T, U, V NORTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY TO CORRIDOR H AND ROOMS 164, 166, 170 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: V	Survey Unit N/A

Survey Unit Description Corridors H, J, K, L, S, T, U, V NORTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NX CORNER OF MODULE D, RESPECTIVELY TO CORRIDOR H ROOMS 164, 166, 170 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building 707
Survey Area: V	Survey Unit N/A

Survey Unit Description: CORRIDORS H, J, K, L, S, T, U, V NORTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY TO CORRIDOR H ROOMS 164, 166, 170 BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e g, indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0002		Building 707			
Survey Area· V		Survey Unit N/A			
Change #	Description	<u> </u>	Initiator/ Date	PRE	
	Added page 6A Deleted net to divine		0 12/2/99	MISE	
	De la how are to divert	SCAN & MENS	12/2/1/19	135	9/1/0
2	Replaced pg 6 to delete	SOOC SE MEAS	00/1/00	Affer	1
3	Replaced or GA W/RON	sed on	Of 61/18/00	ABE	
4	REPLACED PR 9 W/ Pgs	9-40	Dr 4/24/00	EOM	
	•				
				!	
					1
			<u> </u>		
					1
					E

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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Buil	ding 707					
Survey Area: V	Surv	Survey Unit N/A					
Survey Type: Reconnaissance Level Characterizati	on Survey	X Final Status Surv	еу 🗆				
All Documentation Reviewed for Completion		RCT Supervisor	PRE				
Scan Surveys		1	d-				
Total Activity Surveys		٨	d				
Exposure Rate Surveys		NA	NA				
Removable Surveys		S	d-				
Media Samples		als	DOM				
Volumetric Samples		NA	NA				
All Surveys and Samples Accounted For		RCT Supervisor	PRE				
Scan Surveys		S	b				
Total Activity Surveys		1	Ø,-				
Exposure Rate Surveys		NA	NA				
Removable Surveys		S	d-				
Media Samples		QL)	ROM				
Volumetric Samples		NA	NA				
Comments							



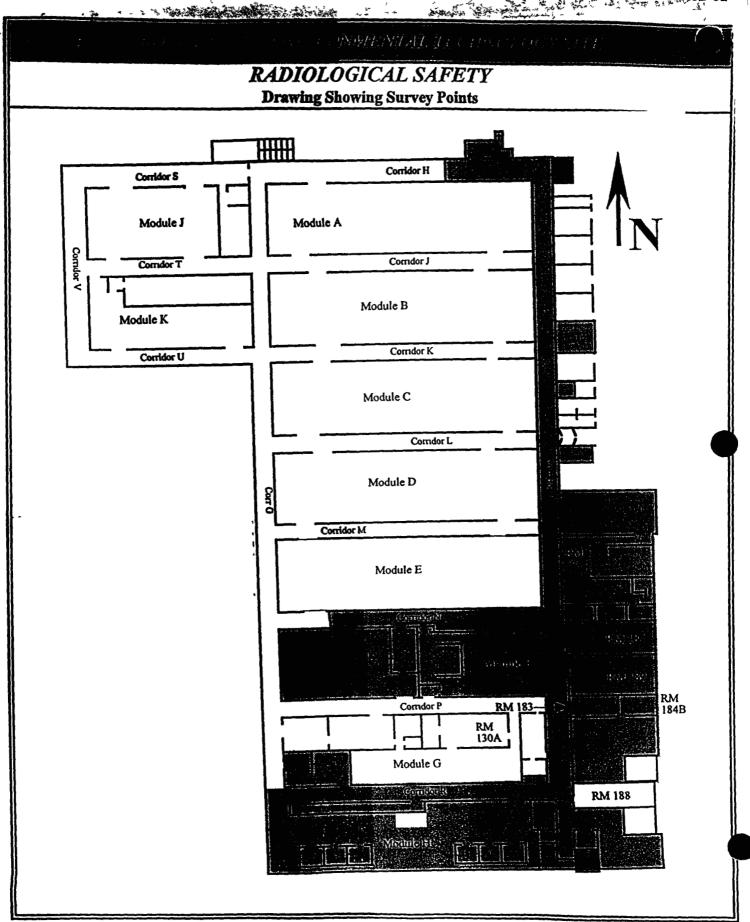
Rev 9/99

316/466

	ACHTAG E	2 - 7A 1 M	a proper de	SNU BULLUE	(Criniolio)	esk syllin	Page
1	NSTRUMENT	DATA	Consequences of the second		ma di Assa, Massadini y antero assassamilia		
Mfg	Mfg.			Survey Tv	no•		
Model Model			1	Building	pc		
Serial #	Model Serial #	Node	#				
Cal Due	Cal Due		# ue				
				Tarpose _			
Bkg.	Bkg.	BKg.		D117D#			
Efficiency	Efficiency	Enici	ency	KWP# _	 		
MDA	MDA	MDA		Dete		Т	
		3.60		Date		Time	
Mfg	Mfg.	Mig		D.COT		,	,
Model	Model	Mode	1			<i>[</i>	
Serial #	Serial #		#	ļ P	rint name	Signati	ure Emp #
Cal Due			ue	7000		,	,
Bkg				RCT		<i></i>	
Efficiency		Effici	ency	ļ P	rint name	Signati	ıre Emp #
MDA	MDA	MDA		<u> </u>			
PRL#:Comments							
			SURVEY F	ESULTS			
REMOVABLE	REMOVABLE	DIRECT	DIRECT	REMOVABLE	REMOVABLE	DIRECT	DIRECT
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19. 20 21		Alpha DPM/100 cm²	Beta DPM/100 cm²	Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46	Beta DPM/100 cm²	Alpha DPM/100 cm²	Beta DPM/100 cm²
22 23 24 25				47 48 49 50			<u></u>
Date Reviewed:	R	S Supervisio		nt Name		Signature	Emp #

317 /466

504



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE **INSTRUMENT DATA Contamination** Survey Type _ 'fg Eberline Mfg Eberline Mfg NeTech 707 Model_Sac-4_ Model Sac-4 Building Model Electra Location Corridors Survey Area V Serial # 849 Serial # 1389 Serial # 837 Reconnaisance Level Characterization Purpose Cal Due 4-10-00 Cal Due 5-17-00 Cal Due 6-29-00 Bkg 0.3 cpm Bkg OILCPM Bkg 1cpm RWP# 00-707-1204 Efficiency 20 77% Efficiency 33% Efficiency 33% MDA 139 DPM MDA 11,5 0PM MDA 94 0Pm Mfg NETech Mfg Eberline Mfg Eberline Model BC-4 Model BC-4 Model Electra Serial # 872 Serial # 833 Serial # 3265 Signature / Emp # Print name / Cal Due 7-14-00 Cal Due 7-3-00 Cal Duey - 12-00 Bkg <u>59 cpn</u> Bkg 52 crn Bkg O.Ocpm RCT_ Efficiency 21.012 Efficiency 25% Efficiency 25% Print name / Signature / Emp # MDA 116 90pm MDA 110 40pm MDA 94 ppm Comments Floor / Walls < 2 meters Unbiased survey points 1 m² scans, 1 minute pats and swipes See map for locations, 3 background Counts alpha - 8cpm (1,1,1 **SURVEY RESULTS** Removable Removable Total Total Swipe Location\Description Swipe Location\Description (Results in DPM/100cm²) Alpha Beta Alpha (Results in DPM/100cm²) Alpha Beta Alpha 0 6 0 0 -12 0 16 -48 3 0 - 20 -6 12 17 0 60 0 -36 0 18 -8 48 28 19 0 -24 24 -40 0 20 -24 6 18 0 6 21 78 0 0 0 0 22 12 -36 168 -24 23 -4 9 0 -32 108 0 6 24 80 -18 0 12 10 25 O12 -12 1170 -6 11 26 -36 18 3 -4 24 6 12 3 -4 -52 6 0 13 28 -48 18 20 29 -52 0 36 30

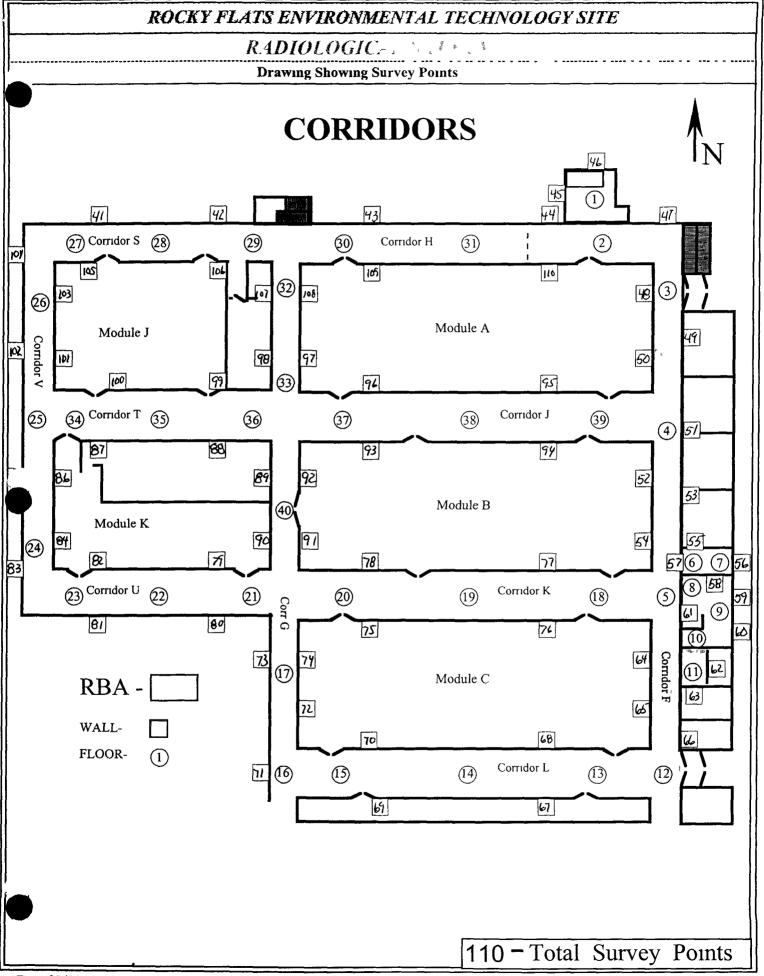
Date Reviewed. 3-21-00 RS Supervision.

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points												
ipe #	Location\Description (Results in DPM/100cm ²)	Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Ren Alpha	novable Beta	Total Alpha			
31	F	0	16		_	W < 2	0	4	18			
32	F	0	-B	0	62	W < Z	3	-4	12			
33	F	0	8	12	63	W < Z	0	-16	36			
34	F	0	0	6	64	W <z< td=""><td>0</td><td>36</td><td>12</td></z<>	0	36	12			
35	F	0	-16		65	W < 2	0	-58	18			
36	F	0	20	66	66	W < Z	0	0	12			
37	F	3	-16	6	67	W<2	0	32	12			
38	F	0	0	18	68	W < 2	0	0	30			
39	F	0	54	18	69	W < 2	0	4	0			
40	F	0	-40	12	70	WZZ	0	-4	6			
41	W 22	3	-40	0	71	W < 2	0	20	-6			
42	W < Z	0	12	-12	72	W <z< td=""><td>D</td><td>-8</td><td>-6</td></z<>	D	-8	-6			
1,3	5>W	0	46	18	73	W <z< td=""><td>0</td><td>4</td><td>0</td></z<>	0	4	0			
4	W < 2	0	-12	30	74	W < Z	0	0	6			
45	WKZ	0	-52	24	75	WZZ	0	-36	12			
46	W < Z	0	-12	6	76	W <z< td=""><td>0</td><td>52</td><td>18</td></z<>	0	52	18			
47	W < Z	0	20	6	77	W<2	0	-16	12			
48	W < Z	0	24	0	7 8	W < Z	3	44	-12			
49	W <z< td=""><td>3</td><td>-92</td><td>-12</td><td>79</td><td>W<z< td=""><td>3</td><td>-8</td><td>-6</td></z<></td></z<>	3	-92	-12	79	W <z< td=""><td>3</td><td>-8</td><td>-6</td></z<>	3	-8	-6			
50	W <z< td=""><td>3</td><td>40 at 3</td><td>1. 00</td><td>80</td><td>W < 2</td><td>0</td><td>-16</td><td>0</td></z<>	3	40 at 3	1. 00	80	W < 2	0	-16	0			
51	MKZ	6	36	٥	81	W < Z	0	-16	6			
52	W <2	0	-8	6		W<2	0	-16				
53	W < 2	0	54	12	83	W<2	0		-6			
54	WZZ	0	12	18	84	W <z< td=""><td>3</td><td>0</td><td>-6</td></z<>	3	0	-6			
55	WKZ	0	-48	30	85	W <z< td=""><td>3</td><td>-4</td><td>-12</td></z<>	3	-4	-12			
56	W<5	3	-40	12	86	vv' <z< td=""><td>0</td><td>4</td><td>-12</td></z<>	0	4	-12			
57	WKZ	0	4	36	87	W-2	0		-12			
	W < Z	0	0	150	88	W <2	3	-4				
59	W < Z	3		108		W <z< td=""><td>0</td><td>32</td><td>18</td></z<>	0	32	18			
60	MYS	3	-20	156	90	W < 2		52	0			

	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE												
	RADIOLOGICAL NATION												
				·		Points	Dom	bla	Læ				
#be	Location\Description (Results in DPM/100cm ²)	Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha	Beta	Total Alpha				
91	W < 2	0	-12	0	121								
92	W < Z	0	36	24	122								
93	W < 2.	3	-4	36	123			ļ	/				
94	W ~ 2	0	40	18	124								
95	W <2	0	-16	18	125								
96	W < 2	0	-8	-6	126								
97	W < 2	3	-8	24	127								
98	W < 2	0	-28	12	128			/ 					
99	W < 2	0	36	0	129								
100	W < 2	0	49	-12	130								
101	W <z< td=""><td>36kg</td><td>-4</td><td>-12</td><td>131</td><td></td><td></td><td></td><td></td></z<>	36kg	-4	-12	131								
102	W <z< td=""><td>3</td><td>4</td><td>~6</td><td>132</td><td></td><td></td><td></td><td></td></z<>	3	4	~6	132								
- 3_	W<2	0	-8	+18	133		/						
1	W <z< td=""><td>3</td><td>8</td><td>0</td><td>134</td><td></td><td></td><td></td><td></td></z<>	3	8	0	134								
105.	W 22	0	0	12	135	N/A	i						
106	V < Z	3	35	18	136								
107	W < Z	0	-40	0	137								
108	W < Z	3	-4	6	138								
109	W < Z	3	0	18	139								
110	WKZ	0	4	0	140								
111	END OF SURVEY				141		1]				
112					142								
113					143								
114					144								
115]	145]				
116	N/A				146								
117					147								
					148								
119					149								
120					150								



Rev 02/00

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

IN	STRUMENT DATA	
1fg Eberline	Mfg Eberline	Mfg NeTech
odel Sac-4	Model Sac-4	Model Electra
serial # 849	Serial # 837	Serial # 1389
Cal Due <u>4-10-00</u>	Cal Due <u>5-17-00</u>	Cal Due 6-29-00
Bkg O. Scpm	Bkg O.3 cpm	Bkg OOcpm
Efficiency 33%	Efficiency 33%	Efficiency 20 11 %
MDA 156 DPm	MDA 139 ppm	MDA 94 DPm
Mfg Eberline	Mfg Eberline	Mfg NE Tech
Model BC-4	Model BC-4	Model Electra
Serial # 872	Serial # <u>833</u>	Serial # 3265
Cal Due 4-12-00	Cal Due 7-14-00	Cal Due <u>7-3-00</u>
Bkg 49 cpm	Bkg 52 cpm	Bkg Oil cpm
Efficiency 25%	Efficiency 25%	Efficiency 21.01%
MDA 107.5 DPM	MDA 110.4 DPm	MDA gydpm
	/ 777 11	T 1

Survey T	ype Contai	mination	
Building_	707		
		Survey Area	
Purpose _	Reconnaisanc	ce Level Characterizatio	n
RWP#	00-7	107 -1204	
Date	2-29-00	_ Time	

Comments Floor / Walls < 2 meters Brased survey points

1 m² scans, 1 minute pats and swipes See map for locations
3 alpha by ad courts electra ~8 cpm (0,0,4)

SURVEY RESULTS

L									
Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	ovable Beta	Total Alpha
1	F-AT DOOR	M	24	64	16				
2	FILL	3	-5L	48	17				
3	F 11 11	0	-24	24	18				
4	Fuu	3	-36	48	19				
5	FIII	3	-24	12	20				
6	Fun	6	20	60	21				
7	Fun	0	68	18	22				
8	FIII	3	-4	36	23	N/A			
9	FIII	0	-36	18	24				
10	FIII	٥	-16	12	25				
11	END OF SURVEY				26				
12					27				
13	NA				28				
14					29				
6 5					30				

Date Reviewed. 3 21 00 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

IN	NSTRUMENT DATA	A	
Mfg Eberline	Mfg Eberline	Mfg NeTech	Survey Type. Contamination
Model Sac-4	Model Sac-4	Model Electra	Building 707
Serial #_849	Serial #_ 837	Serial #_/5/8	Location North Corr Survey Area V
Cal Due <u>4-10-00</u>	Cal Due 5-17 00	Cal Due 6-29-00	Purpose Reconnaisance Level Characterization
Bkg <u>0.6</u> ym	Bkg of gon	Bkg 10 com	77 1071
Efficiency 33%	Efficiency 33%	Efficiency 17%	RWP# 00-707-1204
MDA <u>/6 3 dan</u>	MDA 148 dpm	MDA 94 dpm	Date 3-/6-00 Time /630
Mfg Eberline	Mfg Eberline	Mfg	
Model BC-4	Model BC-4	Model	

 Cal Due 4-12-00
 Cal Due 7-14-00
 Cal Due MA

 Bkg 56 cpm
 Bkg 50 cpm
 Bkg

 Efficiency 25%
 Efficiency 25%
 Efficiency MDA

MDA 141 cm MDA 08 4 dpm MDA

Serial # 833

Serial # 872

Comments Floor / Walls < 2 meters Brased survey points

1 m² scans, 1 minute pats and swipes See map for locations

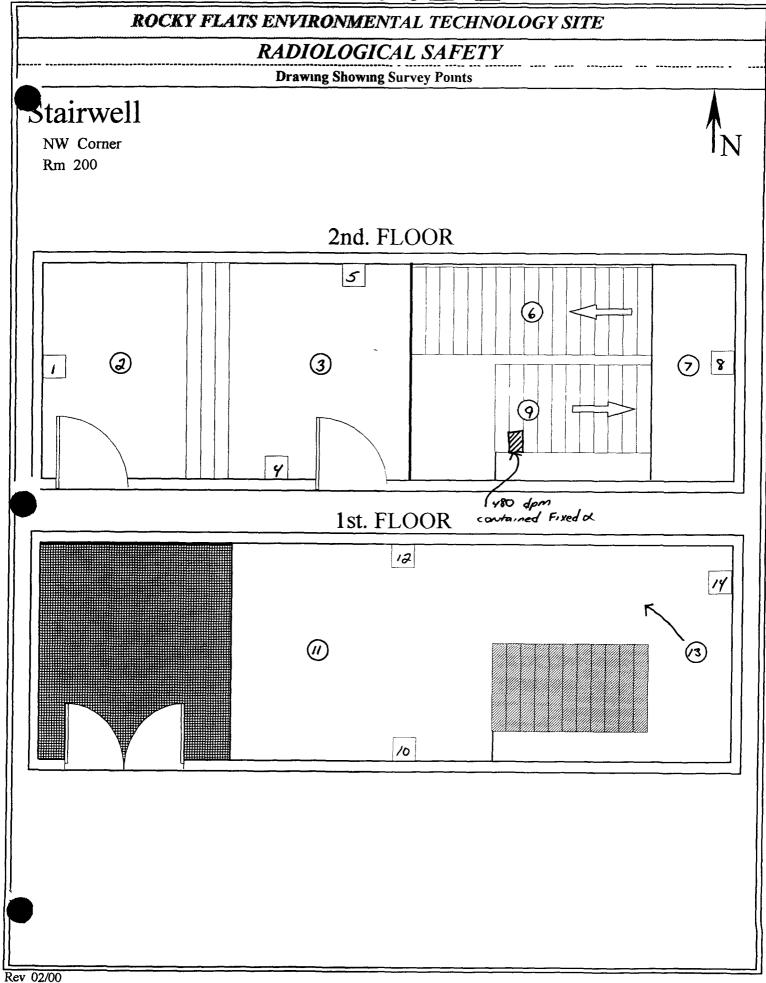
3 alpha blego counts electra 28 cpm (2,2,3)

Serial #

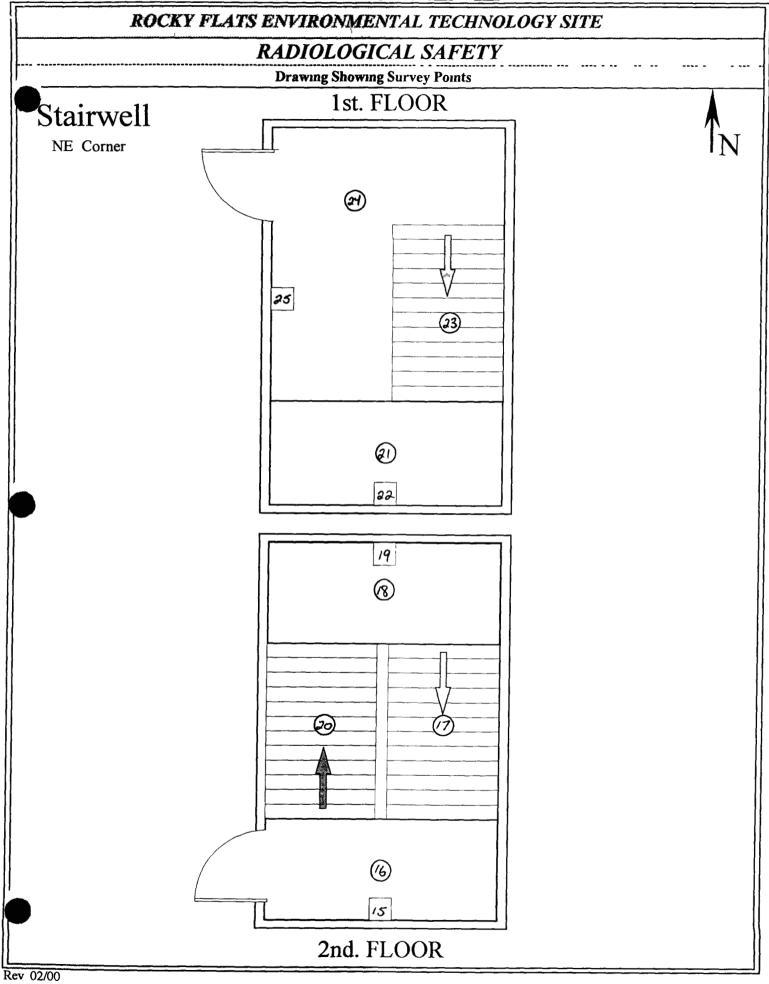
SURVEY RESULTS

!!	<u> </u>											
Swipe	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha			
1	Wall	0	-20	96	16	Floor	3	8	54			
2.	Floor	3	32	60	17	Floor	3	-12	36			
	F/005	6	-20	90	18	Floor	0	4	24			
ĮĮ.	wall	0	48	36	19	Wall	0	-8	60			
5	wall	0	16	42	20	Floor	0	32	30			
6	Floor	0	32	60	21	Floor	3	24	66			
	Floor	0	8	66	22	Wall	3	32	18			
	Wall	0	48	54	23	F/001	12	8	48			
	F/oor	0	-20	6	24	F/005	0	-24	54			
	wall	0	-8	24	25	wall	6	-4	48			
11.	F/005	3	16	24	26	END of Survey						
12	wall	0	72	60	27							
13	F/601	0	32	66	28	NA						
14	Wall	0	32	48	29							
15	Wall	3	-12	42	30							

Date Reviewed: 3 21-00 RS Supervision:

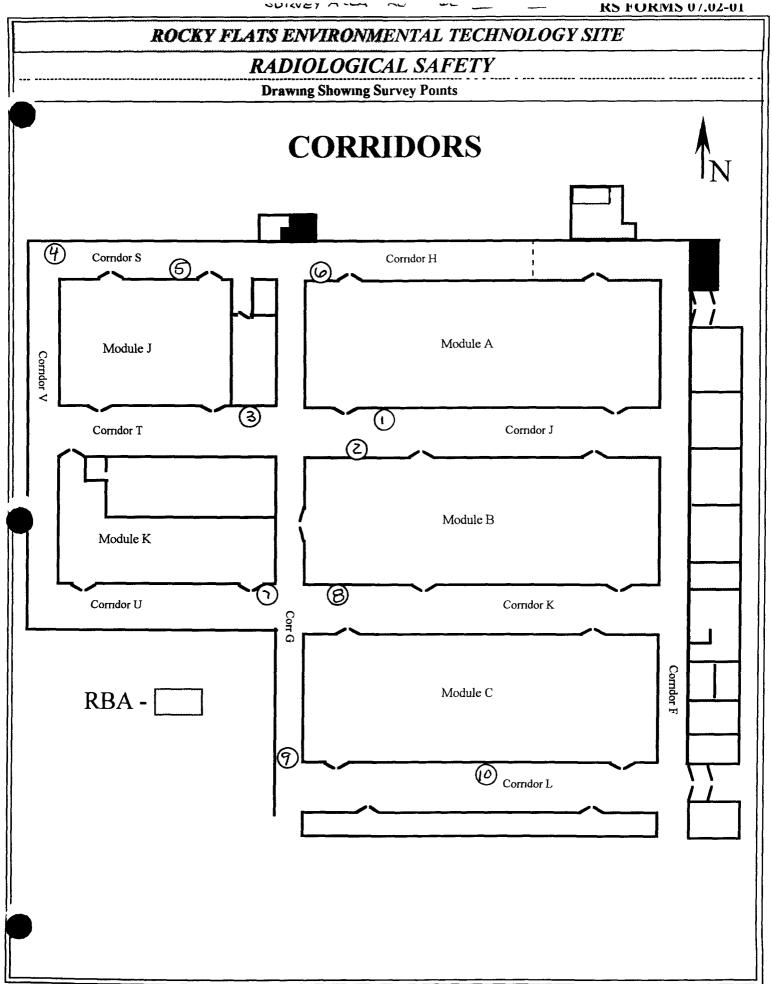


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516

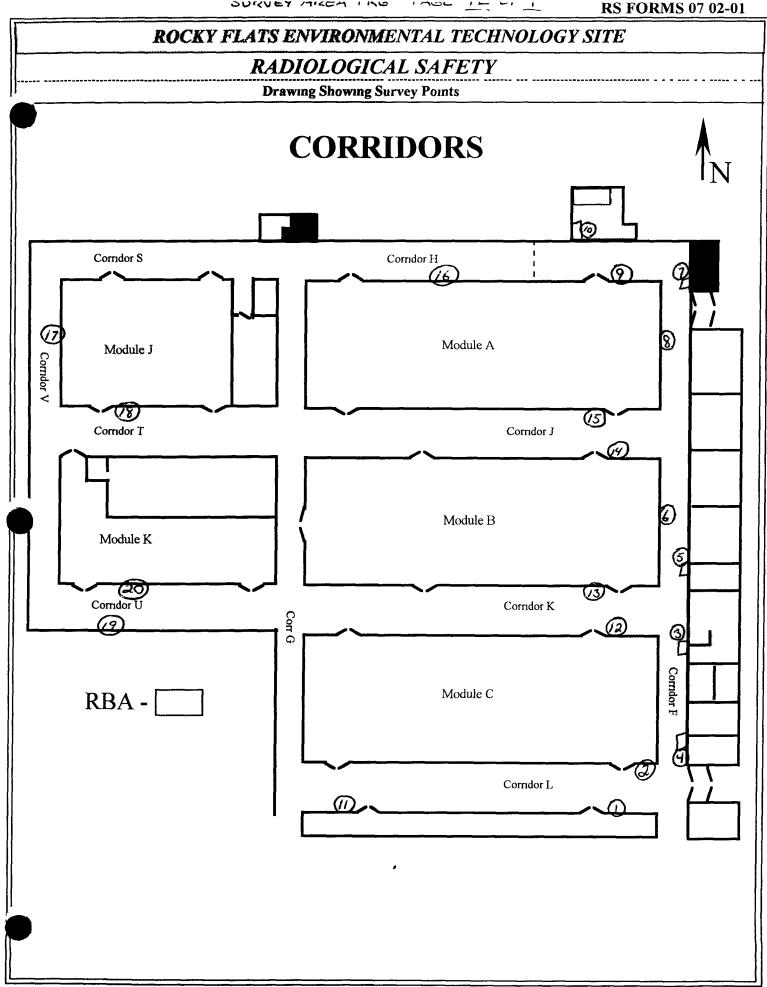
	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE												
		TRUMENT DA					C4						
		Mfg Eberline		g NeT			vey Type Contaminatio	<u>n</u>					
-		Model Sac-4		del Elec			ding 707	Cum		00 1/			
	#849	Serial # 837		ral #_3.			tion <u>Corridor</u> Reconnaisance Level (vey Are				
		Cal Due <u>5-/2-0</u> Bkg <u>0 3 cpn</u>		g <u>20</u>		Puip	ose Reconnaisance Dever		- Izacı	<u> </u>			
		Efficiency 33%			-	RW	P# 00-707-1204						
		MDA 139 der	_)A <u>94 </u>			2-1-00	110	.0				
	-	•			·	Date	e <u>3-/-00</u> Time _	_/60	<u>U</u>				
		Mfg Eberline											
		Model BC-4 Serial # 833				RC							
		Cal Due <u>7-/4-00</u>	-			'							
:4		Bkg 5/ 4pm				D.C.T	•						
Efficie	ency 25%	Efficiency 25%	Eff	iciency	2071	RCT	Print name / Signatu	ıre	/ Emp				
MDA	106.5 dpm	MDA 109.40pm				<u> </u>							
Comm	ents <u>Equipr</u>	nent Brased su	rvey p	<u>oınts</u>									
		d swipes See i											
		alpha elect					, ,/						
Equi	oment (or	ridos 10 of	30										
				SU.	RVEY	<u>resu</u>	<u>LTS</u>						
Swipe	Location\Descri	iption	Rem Alpha	ovable Beta	Total	Swipe	Location\Description 2	Remo	ovable Beta	Total Alpha			
# ((Results in DPM/1	100cm ²)	Alpha	 	Alpha	#	(Results in DPM/100cm ²)	Aiplia	Deta	Aipiia /			
$\frac{1}{\epsilon}$	E Vent		0	20	54	16							
2.	E Vent		3	-40	186	17				/			
3.	E Vent		0	-4	192	18							
4 /	Process L	Jaste Pipe	0	48	24	19							
5. <i>E</i>	= Vent		0	36	90	20			/				
6 6	E Vent	:	0	-4	48	21		$\perp \angle$					
7. €	. Ven4		0	16	42	22							
8 €	Vent Freph		9	-4	384	23	/	1					
9 6	Freph	one	3	-24	12	24	N/A						
10. 6	E Ven4		3	-20	84	25							
11.	END OF	SURVEY				26							
12.						27							
13		NA			·	28							
14.			_			29							
15.													
Date R	eviewed: 3	- <u>21-00</u> RS St	ıpervis	i									



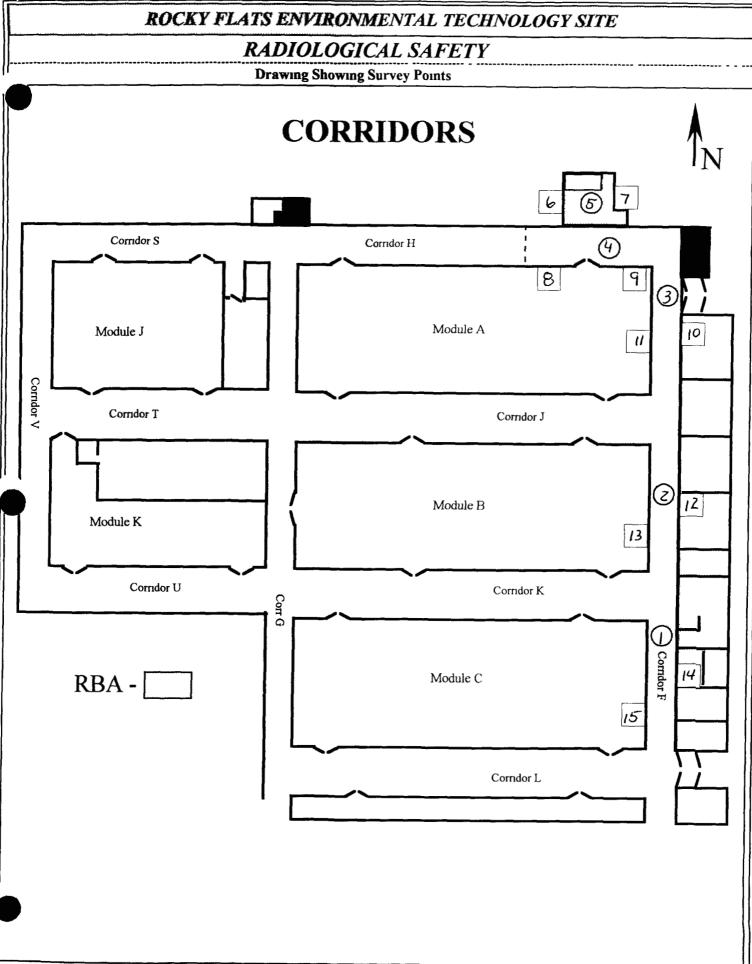
(Survey Area Pkg Page 4K of 4) RS FORMS 07.02-01 ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE INSTRUMENT DATA Contamination **Survey Type** Mfg Eberline Mfg Eberline Mfg NeTech Building 707 Model Sac-4 Model Sac-4 Model Electra Location North Corridors Survey Area V Serial #_849 Senal # 3120 Serial # 837 Reconnaisance Level Characterization Purpose Cal Due 4-10-00 Cal Due 5-/7-00 Cal Due 4 26 00 Bkg O. | con Bkg O.2 com Bkg 5 com RWP # 00 - 707 - 1204Efficiency 33% Efficiency 33% Efficiency 17% MDA 115 dan MDA 94 dum MDA 129 don Date <u>3-20 00</u> Time <u>/630</u> Mfg Eberline Mfg Eberline Mfg \ Model BC-4 Model BC-4 Model RC Serial # 872 Serial # 833 Serial # Cal Due 7 1400 Cal Due Cal Due 4-12 00 Bkg 54 com Bkg <u>53 cpm</u> Bkg RCT Efficiency 25% Efficiency 25% Efficiency Signature Print name / Emp # MDA 112.3 dom MDA /// 3 **MDA** Comments Equipment Biased survey points 1 minute pats and swipes See map for locations Continuation dated 3-100 Surver **SURVEY RESULTS**

Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1.		0	-40	 	16	Vent	3	56	84
2.	Vent	0	-4	36	17	Vent	0	-20	84
11	Electrical prive!	0	-16	-24	18	Venl	3	20	90
H	Box	0	80	-6	19	Vent	0	28	36
		0	-4	-6	20	Vent	0	-40	72
6.	F/O Box Lockers	3	-72	6	21	Ext of siver			
	B0X	0	-4	-6	22				
	Eye Wash	0	-40	60	23				
9.	Vent	0	4	66	24				
10	Tray	3	-20	12	25				
RE 1	Vent	3	-24	24	26	N/A			
	vent	3	-4	0	27				
	Vent	0	44	96	28				
	Vent	3	-8	0	29				
	Vent	0	-12	102	30				- 1

Date Reviewed: 426-00 RS Supervision:



ROCKY FL	4TS E	NVIR	ONM	ENT	AL TECHNOLOGY	SITE	<i>;</i>		
INSTRUMENT DA	TA	*****			C	4			
Mfg Eberline Mfg Eberline		fg <u>NeT</u>			vey Type Contami	natioi	1		
Model Sac-4 Model Sac-4		odel Elec			ing <u>707</u>		Carre	A	
Serial # 849 Serial # 837		rıal # <u>/2</u>			tion <u>North Corridors</u> ose Reconnaisance I			y Area terizati	
Cal Due <u>4-70-00</u> Cal Due <u>5-77-0</u>		_		Purp	ose Reconnaisance I	JCVCI C	marac	ici izati	ОП
Bkg <u>O 6 cm</u> Bkg <u>O 4 cm</u> Efficiency 33% Efficiency 33%	_	g <u>/o</u> ficiency		RW	P#_00-707	-120	74		
MDA 163 dpm MDA 148 dpm		DA <u>99</u>							
			opm_	Dat	e <u>3./6.00</u> T	ime	1630		
Mfg Eberline Mfg Eberline		g —							
Model BC-4 Model BC-4	_	odel	 -						- }
Serial # 872 Serial # 833		rıal # 1 Due/	.\/a						
Cal Due <u>4-/2-00</u> Cal Due <u>7-/4-00</u> Bkg <u>56 000</u> Bkg <u>50 000</u>		g							
Efficiency 25% Efficiency 25%		g ficiency	- +						
MDA 1/4/ op MDA 108 4 do			/			42_	ts not	pur to	Yard
Comments Ceiling / Walls > 2 mo			survev	points				marca	
1 minute pats and swipes See				<u> </u>				the	
3 bkgd alpha counts	letra	28cp	m (1,1,2		This a	ua P	ested	
continuation to surve	y a	lated	2-	28-0	O RBA only	fore	ntry,		
/			RVEY		J		3		
Swipe Location\Description		novable	Total	Swipe				ovable	Total
# (Results in DPM/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)		Alpha	Beta	Alpha
1. Ceiling vent	3	-8	18	16	END OF Surve	2/			
2. Ceiling Vent	3	28	12	17	/				
3. Ceiling Vent	0	40	6	18					
4. Ceiling vent	3	12	12	19			/		
5 Ceiling	0	-36	6	20					
6. wall	3	4	12	21					
7. wall	6	40	6	22	N	A			
8. wa//	0	-4	12	23					
9 wall	0	-4	6	24					
10. wa//	0	-8	6	25					
11 ma//	3	-24	-6	26					
12 wall	0	16	12	27					
13. wall	0	-24	12	28					
14. wall	0	16	6	29	/				
15 ~ ~ //	0	12	6	30	/				
Date Reviewed: 3 21 00 RS S	upervis	sion:							



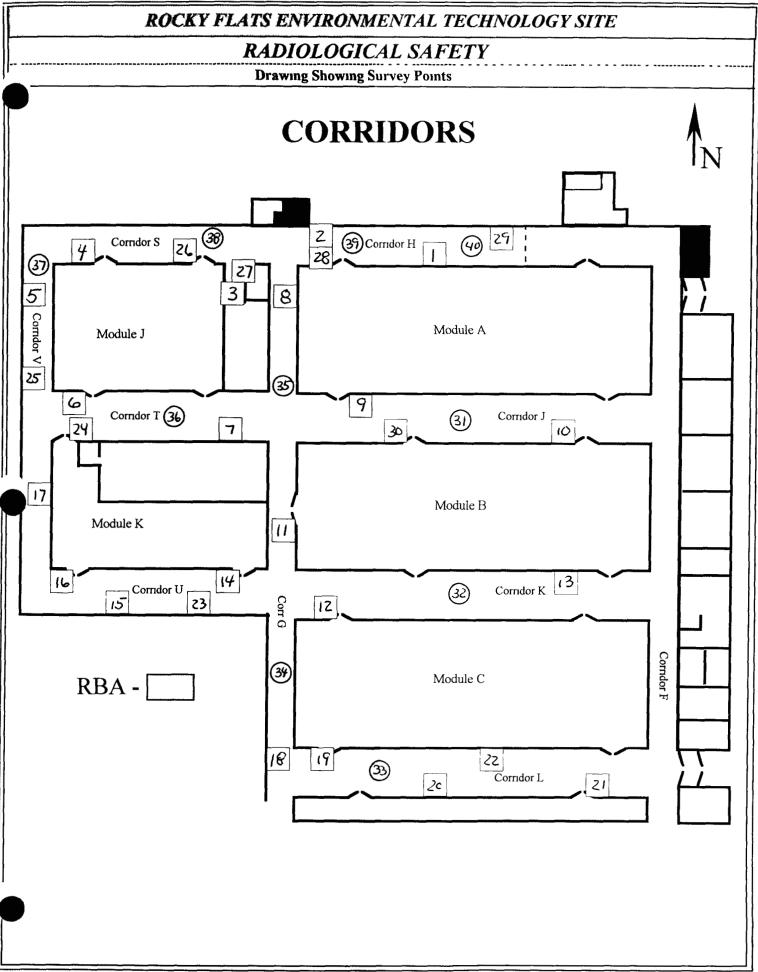
522

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE								
INSTRUMENT DATA								
1fg Eberline Mfg Eber		g NeT	ech		vey Type Contaminatio	<u>n</u>		
1odel Sac-4 Model Sa		odel Elec		Build	ling 707			
Serial # 8 49 Serial # 8 3	7 Ser	nal #_/&	33	Loca	tion corrictors North		ey Area	
Cal Due <u>4-10-00</u> Cal Due <u>5-</u>				Purp	ose Reconnaisance Level	Charac	terizati	ion
Bkg 05 cpm Bkg 0.3		g _ o		DIV	P#_00-707-120	4		
Efficiency_33% Efficiency_		iciency			P#	<u>, </u>		
MDA 156 OPM MDA 13.0	1 DPm MI	DA _ 94	DPM	Dat	2-28 00 Time _	1600		
Mfg Eberline Mfg Eber	rline Mi	`g \						
Model BC-4 Model BC		odel						3
Serial # 872 Serial # 8	33 Ser	nal #						
Cal Due <u>4-12-00</u> Cal Due <u>7-</u>		Due 🙏	XA_					
Bkg 49 cp Bkg 50 c			\ -					
Efficiency 25% Efficiency		iciency_	+					
MDA 1675 DPM MDA 1101				1				
Comments Ceiling / Walls >	Soomer for	r locate	urvey j	SJUIOC	v. 0 c . t 1 - 1 - 1 - 1 - 1	6.	9	
False Caling Tiles	CA-	onlu	JUS	3 b	kopl courts ofpha elec	1/6 -	com	U, 2,3)
using correction	Factors		4= x	3 F	1C-4= x4 Electra alph	a = x 6)	
			RVEY					
Swipe Location\Description		novable	Total	Swipe	Location\Description		ovable	Total
# (Results in DPM/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
1/1 22m	0	68	84	16	u' //	12	0	36
2 w "	0	-52	18	17	u` "	0	20	42
3 Le "	0	-8	30	18	W n	3	-20	48
4 U "	0	-8	12	19	le' "	10	-24	12
5 U 11	0	-28	36	20	lu` 11	0	8	60
6 W "	3	4	/8	21	K 11	0	8	30
7 u "	0	40	18	22	a' 11	3	36	18
8 U 1	3	-36	24	23	(c) 11	0	12	48
9 w 11	3	-8	30	24	(c) 11	0	-8	12
10 W 1,	0	8	24	25	u` 11	0	24	24
11 11 11	0	56	18	26	le' 11	0	28	48
12 W 11	0	-32	30	27	u' 11	0	-48	48
13 607 11	0	-44	60	28	cl' 11	0	-28	18
14 W 11	3	-36	18	29	lc "	0	-60	42
15 42 11	0	24	48	30	u' 11	0	-36	60
Date Reviewed 3 21.00	Date Reviewed. 3 21.00 RS Supervision							

	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE								
	RADIOLOGICAL SAFETY								
	Drawing Showing Survey Points Description Removable Total Swipe Location Description Removable Total Total Removable Total Total Total Removable Total Removable Total Total Removable Total Total Removable Total Total Removable Total Total Removable Total Total Removable Total Remo								
#	Location\Description (Results in DPM/100cm ²)	Remo Alpha		Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha		Total Alpha
31	Ceiling Tites	3	52	72	61				
32	Ceiling Tiles	3	-/6	18	62		ļ		
33	Ceiling Tiles	3	16	30	63			ļ 	
34	Ceiling Tiles	0	-52	54	64				
35	Cerling Tiles	3_	-16	36	65		<u> </u>		
36	Cerling Tiles	6_	-44	36	66				
37	Cerling Tiles	0	44	30	67				
38.	Ceiling Tites	9	4	36	68		 		
39	Cerling Tiles	0	-16	54	69		<u> </u>		
40	Ceiling Tiles	3	8	42	70		ļ		
41					71				
42					72				
3	`\				73				
44	MA				74				
45					75		<u> </u>		
46	\				76				
47					77				
48					75				
49					79		ļ		
50					80				
51					81				
52					82				
53					83		4		
54		\			84				
55		}			85				
56			Δ		86		1		[
57			<u> </u>		87				,
8					88				
59				`\	89		1		
60					90				

NOTICE

All drawings located at the end of the document.



SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002		Building 707	
Survey Area· W		Survey Unit N/A	
Initiator/ Date	Release Date	Validation Date	Closure Date
10/25/49	9/ 12/2/19	KOM 6/14/00	Kom 6/14/00
	<i>VV</i>		
-			

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PAGE SUPERCEDED 2/25/00 9 Ung #4 INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	0002	Building 707		Type 3		
Survey Area W Survey Unit N/A			L	Area (m ²) 818		
CORNER AND NW	CORNER OF MODULE	S.S.M., N., P., R. AND THE D., RESPECTIVELY, EDING 707 RADIOLOGIC	XTENDING TO THE S	OUTH END OF BUILI	DING 707	
Survey Type			Classification			
RLC Survey X	Pes 🗆		Class 1 Class	2 □ Class 3 □ U	J nknown X	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
105	82	30	3	0	115	
Building		Туре		Survey Area		
Survey Unit			Area (m²)			
Survey Unit Desc	cription					
Survey Type			Classification			
RLC Survey □	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown 🗖	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building		Туре	Survey Area			
Survey Unit	-	=	Area (m²)			
Survey Unit Desc	cription					
Survey Type			Classification	e de la companya de l	77 20 20 20 20 20 20 20 20 20 20 20 20 20	
RLC Survey □	FSS 🗆		Class 1 Class	2□ Class 3□ U	Jnknown □	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building		Type·		Survey Axea		
Survey Unit			Area (m²)			
Survey Unit Description						
Survey Type			Classification			
RLC Survey □ FSS □		Class 1 Class:	2 □ Class 3 □ U	Jnknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scales	

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	D 99-0002 Building 707			Type 3	
Survey Area. W		Survey Unit: N/A	Area (m ²) 818		
CORNER AND NW	CORNER OF MODULE	D, RESPECTIVELY, E	EXTENDING TO THE S	RRIDORS F AND G FF SOUTH END OF BUILL TED AS FIXED CONT.	DING 707
Survey Type			Classification		
RLC Survey X	FSS □		Class 1 □ Class	2 □ Class 3 □ U	J nknown X
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
79	50	30	3	0	89
Building		Туре		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Des	cription				
Survey Type			Classification		
RLC Survey □	FSS □		Class 1 🗆 Class	2 □ Class 3 □ U	Jnknown □
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
	1				
Building Type·			Survey Area		
Survey Unit			Area (m²)		
Survey Unit Des	cription				
Survey Type			Classification		
RLC Survey □	FSS □		Class 1 Class	2 🗖 Class 3 🗖 U	Jnknown 🗖
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Туре	Survey Area		
Survey Unit		Area (m²)			
Survey Unit Description					
Survey Type			Classification		
RLC Survey 🗆	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown 🗆
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building 707			
Survey Area: W	Survey Unit N/A			
Survey Unit Description: CORRIDORS M, N, P, R AND THE SOUTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY, EXTENDING TO THE SOUTH END OF BUILDING 707 INCLUDES ROOMS 178 AND 178A BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS				
Building Information:				
Survey Type Reconnaissance Level Characterization S	Survey X Final Status Survey			
Building Type Type 1 Type 2 Type 3 X				
Classification Class 1 □ Class 2 □ Class 3 □ Ur	nknown X			
Contaminants of Concern Plutonium X Uranium X	Other			
Justification for Classification: N/A				
Special Support Requirements: Ladder, manistrumentation may be required for access into				
Special Safety Precautions: Access to overhead Review RWP requirements and surveys prior to overheads				
Isolation Controls:				
Level 1 □ Level 2 □ N/A X				
Labeling Requirements: NONE				
Survey Package Implementation:				
	The state of the s			

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Fage Superiode 2/25/00 // Chy #4 PAG SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002 Buildin		Building	ing 707		
Survey Area. W		Survey U			
FROM THE NE CO SOUTH END OF B	RNER AND NW CORNER OF MO	DULE D, R S 178 AND	OUTH ENDS OF CORRIDORS F AND G ESPECTIVELY, EXTENDING TO THE 178A BUILDING 707 RADIOLOGICAL		
	Minimum Survey/Sampling	Measurem	nent Requirements		
Measurement	Number and Type		Comments		
Surface Activity Measurements	FLOORS/WALLS < 2 meters 105 unbiased survey points uniformly of throughout the specified corridors (3 per wall section – module walls to be to separately. For rooms 178 and 178A to floor and 2 per wall. 10 biased survey points at the following locations. 1 point near 2 of the 4 doors on ear module adjacent to the corridors. CEILINGS/WALLS > 2 meters. 72 biased surveys with focus on follow. Ceilings/walls adjacent to storage. Stained or discolored areas. Areas around pipe or other penetra. EQUIPMENT. 30 biased survey points on equipment or more samples from. Surveys points at exhaust ducts in Survey points on top of overhead (where locations are accessible thr reach tools). Survey points where pipes/equipment at dropped ceilings (where). Other equipment as determined by	g ach aring areas vaults with one corridors piping rough ment present)	SEE NOTE 2 SEE NOTE 3 SEE NOTE 4		

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002	Building 707
Survey Area. W	Survey Unit N/A

Survey Unit Description. CORRIDORS M, N, P, R AND THE SOUTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY, EXTENDING TO THE SOUTH END OF BUILDING 707 INCLUDES ROOMS 178 AND 178A BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Minimum Survey/Sampling Measurement Requirements Measurement Number and Type **Comments** FLOORS/WALLS < 2 meters **SEE NOTE 1** Surface Activity Measurements 79 uniformly distributed survey points **SEE NOTE 2** throughout the specified corridors (3 per floor, 2 **SEE NOTE 3** per wall section - module walls to be treated separately For room 178 take 3 wall points, 3 **SEE NOTE 4** floor points For room 178A take 1 floor and 1 wall point 10 biased survey points at the following 1 point near 2 of the 4 doors on each module adjacent to the corridors CEILINGS/WALLS > 2 meters 40 biased surveys with focus on following areas Ceilings/walls adjacent to storage vaults Stained or discolored areas Areas around pipe or other penetrations **EQUIPMENT** 30 biased survey points on equipment with one or more samples from Surveys points at exhaust ducts in corridors Survey points on top of overhead piping (where locations are accessible through reach tools) Survey points where pipes/equipment penetrate dropped ceilings (where present) Other equipment as determined by RCT

PAGE 5 PAGE 5 SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

30(1.21)			(cont)		
Package ID: 99-00	002	Building	; 707		
Survey Area · W		Survey Unit N/A			
FROM THE NE CO SOUTH END OF BU	RNER AND NW CORNER OF MO	DULE D, I S 178 AND	THE SOUTH ENDS OF CORRIDORS F AND G LE D, RESPECTIVELY, EXTENDING TO THE 8 AND 178A BUILDING 707 RADIOLOGICAL EAS		
	Minknum Survey/Sampling Measurement Requirements				
Measurement	Number and Type		Comments		
Surface Scanning	FLOORS/WALLS < 2 meters		SEE NOTE 1		
	115 1 m ² surface scans shall be taken a	it each	SEE NOTE 2		
	location identified for surface activity measurements. Locations found to be	above the	SEE NOTE 3		
	DCGL will be noted		SEE NOTE 4		
	CEILINGS/WALLS > 2 meters NO EQUIPMENT NONE	NE			
	EQUIPMENT NONE				
Media Samples	Total of 3 biased (paint) media samples taken as follows		SEE NOTE 5		
	- 1 sample each near an entrance (d by RCT) to two modules (2 samp				
	1 sample near an eyewash station floor drain	/			
	noor drain				
Volumetric Samples	NONE				
Jactomio Commi	NONE				
Isotopic Gamma Scans	NONE				

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: W	Survey Unit N/A

Survey Unit Description CORRIDORS M, N, P, R AND THE SOUTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY, EXTENDING TO THE SOUTH END OF BUILDING 707 INCLUDES ROOMS 178 AND 178A BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

	Minimum Survey/Sampling Measure	ment Requirements
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 89 1 m² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted. CEILINGS/WALLS > 2 meters. NONE. EQUIPMENT. NONE.	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 3 biased (paint) media samples taken as follows - 1 sample each near an entrance (determined by RCT) to two modules (2 samples total) - 1 sample near an eyewash station or other floor drain	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (conf)

Package NO: 99-0002	Building 707
Survey Area: W	Survey Unit N/A

Survey Unit Description. CORRIDORS M, N, P, R AND THE SOUTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY, EXTENDING TO THE SOUTH END OF BUILDING 707 INCLUDES ROOMS 178 AND 178A BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alphathen beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing the's areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For each media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO 165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02. Contamination Monitoring Requirements

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: W	Survey Unit N/A

Survey Unit Description. CORRIDORS M, N, P, R AND THE SOUTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY, EXTENDING TO THE SOUTH END OF BUILDING 707 INCLUDES ROOMS 178 AND 178A BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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SURVEY PACKAGE SURVEY/SAMPILING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area W	Survey Unit N/A

Survey Unit Description: : CORRIDORS M, N, P, R AND THE SOUTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY, EXTENDING TO THE SOUTH END OF BUILDING 707 INCLUDES ROOMS 78 AND 178A BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area
- 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in <u>addition to</u> the standard PAT measurement taken at the identified survey point
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area. W	Survey Unit N/A

Survey Unit Description: CORRIDORS M, N, P, R AND THE SOUTH ENDS OF CORRIDORS F AND G FROM THE NE CORNER AND NW CORNER OF MODULE D, RESPECTIVELY, EXTENDING TO THE SOUTH END OF BUILDING 707 INCLUDES ROOMS 178 AND 178A BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4- Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e g, indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID:	ackage ID: 99-0002 Building 707			
Survey Area	· W	Survey Uni	Survey Unit N/A	
Change #	Description		Initiator/ Date	PRE
/	Added page	6A	9/ 12/21/99	Albe
2	Deleted 25 to	turct sav beta	1845 Gg 12/2/11	1135 MOI
2_	Replaced pg 6 to	dekk spec. B'm	BAS. Of oilsoo	SIDE I
3	Replaced of 6A	w/ perised pg	92 0/18/00	MAZ
4_	Replaced pg's 2, 4, 5	ove to che in sucre	m # () 02/25/00	Pall
5	Maps & data	Mongh & with day	pleted /2/00 4/12/00	do

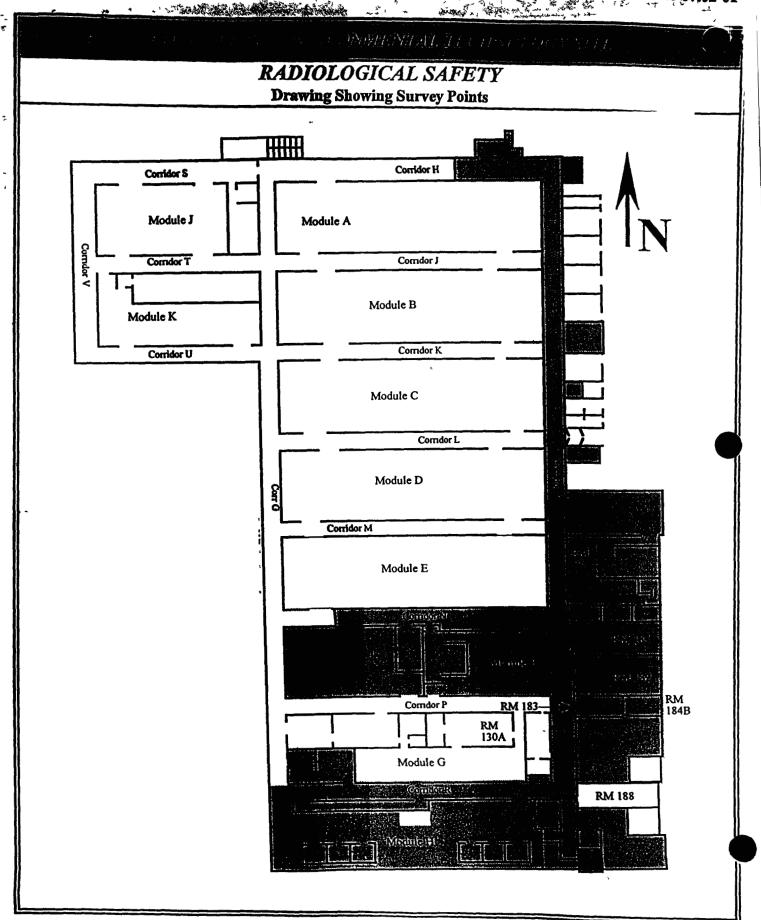
SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Buil	Building 707				
Survey Area: W	Sur	Survey Unit N/A				
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey □						
All Documentation Reviewed for Completion		RCT Supervisor	PRE			
Scan Surveys		1	b			
Total Activity Surveys		1	do			
Exposure Rate Surveys		NA	NA			
Removable Surveys		S	b			
Media Samples		081	DOM			
Volumetric Samples		NA	NA			
All Surveys and Samples Accounted For		RCT Supervisor	PRE			
Scan Surveys		J	b			
Total Activity Surveys		1	do			
Exposure Rate Surveys		NA	NA			
Removable Surveys		Å	di-			
Media Samples		and	EM			
Volumetric Samples		NA	NA			
Comments	Comments					

Page Superceded tom 4/12/00 Change # 5

		Leading at My	ogeogy ye b	Nuau, mi	COEINIGILIOX	717 (S)1711 18 1 - 2					
I	NSTRUMENT	DATA	Control of the Contro								
Mfg	Mfg			Survey Tv	ре:						
Model	Model			Building							
Serial #	Serial #		#	Location*							
Cal Due	Cal Due										
Bkg	Bkg.										
Efficiency	Efficiency	Efficie	ency	RWP#							
MDA	MDA					· · · · · · · · · · · · · · · · · · ·					
MD/1				Date		Time					
Mfg	Mfg.	Mfg_									
Model	Model	Model		RCT		•	1				
Serial #	Serial #		#		Print name	Signatu	re Emp#				
Cal Due	Cal Due		ue			<u>-8</u>					
Bkg	Bkg.			RCT	,	,	/				
Efficiency	Efficiency	Efficie	ency	·	Print name	Signatu	re Emp#				
MDA	MDA					G					
PRL#:											
REMOVABLE Alpha DPM/100 cm ² 1	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm ²	ESULTS REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²				
2				27							
3				28							
4				29							
2				30 31							
7				32	\						
8				33							
9				34							
10				35			·				
11				36 37							
12				38							
14				39		\ 					
15				40							
16				41							
17				42							
18				43 44							
20				45							
21				46							
22				47							
23				48			\				
24 25				49 50							
Date Reviewed:	R	S Supervision		nt Name		Signature	/ Emp #				

326/466



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

IN	ISTRUMENT DATA	1								
Mfg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination							
Model Sac-4	Model Sac-4	Model Electra	Building 707							
Serial #_849	Serial # 837	Serial # 3265	Location South Corridors Survey Area W							
	Cal Due 5-17-00	Cal Due 30 7-3-00	Purpose Reconnaisance Level Characterization							
Bkg <u>o 2 com</u> Efficiency 33%		Bkg 30 com Efficiency 17%	RWP# 00 - 707 -1204							
MDA 129 dpm	MDA 1/5 dpm	MDA gydpm	Date 3-14-00 Time							
Mfg Eberline	Mfg _ Eberline	Mfg \								
ModelBC-4	Model BC-4	Model								
Serial # 872	Serial # 833	Serial #	-							
Cal Due 4-12 00	Cal Due 7.14.00	Cal Due								
Bkg 52 4pm	Bkg 51cpm	Bkg	RCT /A							
	Efficiency 25%		Print name / Signature / Emp #							
MDA 104 dpm	MDA 109 4 dpm	MDA\								
Comments Floor	/ Walls < 2 meters	Unbiased survey	points							
1 m ² scans, 1 m	1 m ² scans, 1 minute pats and swipes See map for locations									
	ind alpha co									
CA ON										
		SURVEY	RESULTS							

SURVEY RESULTS

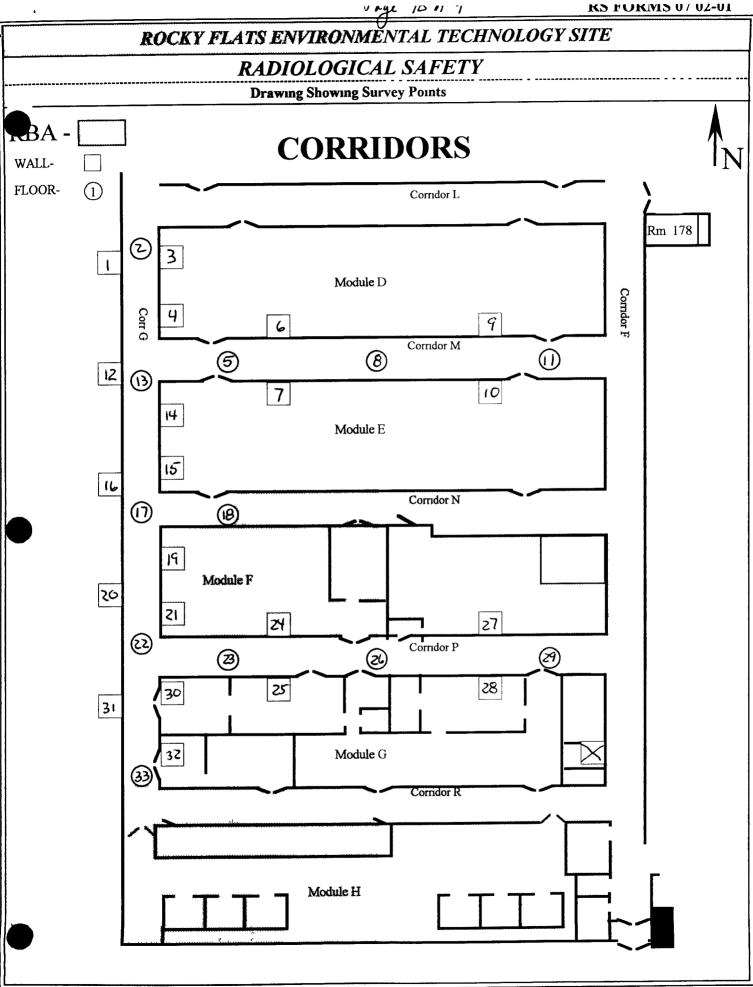
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1.	Wall	0	20	30	16	Wall	3	-24	36
2	Floor	6	-40	36	17	F/oor	0	42	12
3	wall	0	0	36	18	Floor	0	20	8
4	wall	0	4	54	19	Wall	0	-8	6
5	Floor	0	-28	18	20_	Wall	0	-24	12
6.	Wall	0	0	42	21	Wall	3	-20	/8
	Wall	3	52	36	22	Floor	0	56	48
	Floor	3	28	12	23	Floor	0	16	24
	Wall	0	-8	0	24	Wall	6	16	18
1	Wall	0	- 36	6	25	Wall	0	40	30
11.	Floor	0	0	24	26	Floor	0	-16	24
12	Wall	0	-32	12	27	Wall	0	8	30
13	Floor	3	12	48	28	Wall	0	40	36
<u>14.</u>	Wall	3	20	24	29	F 100r	0	- 8	0
15.	Wall	0	-/2	0	30	Wall	0	24	48

Date Reviewed: 3-110-00 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points											
wipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	vable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	ovable Beta	Total Alpha		
31	wall	0	-4	30	61				/		
32	wall	0	12	18	62						
33	Floor End of Survey	0	0	36	63			/	/		
34	End of Survey			/	64						
35					65						
36			/		66			/	_		
37					67		/				
38					68						
39.			/		69		/				
40.					70	/					
41.		/			71						
42.		/			72						
¹¹ 43.	/				73						
44					74	//					
45.	/				75						
46.					76	N/A					
47	Na				77						
48					75_	/					
49.					<u>79</u>						
50					80						
51					81						
52.					82						
53.					83						
54	/			<u></u>	84						
55					85						
56.					86						
<u>57.</u>					87						
8.	_/				88						
59	/				89	1					
60	/			L	90			1			



Note Berline Mode Sac-4 Sac-4		ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE												
Model Sac4 Sac4 Sac4 Sac4 Sac1 # 2.49 Scal # 2.57 Scal W 2.40 Sac1 # 2.49 Scal # 2.57 Scal W 2.50 Skg 0.2 cm Skg		IN	STRUMENT DA	TA				<u> </u>	•	-				
Serial # 2.49 Cal Due 4-10-00 Cal Due 5-17-00 Cal Due 6-17-00 Efficiency 3-26 Efficiency 3-26 Efficiency 3-26 Efficiency 3-26 Efficiency 3-26 Efficiency 3-26 Efficiency 3-26 Efficiency 3-26 Efficiency 3-26 Efficiency 3-26 Efficiency 3-26 Efficiency 3-26 Efficiency 3-26 Efficiency 3-26 MDA				_	-				ion	=				
Cal Due 4-10-00 Cal Due 5-17-00 Cal Due 6-17-00 Recommanance Level Characterization Bkg	Mod	lel Sac-4	Model Sac-4	_ Mo	odel Elec	ctra								
Bkg	Seria	al# <u>849</u>	Serial # 837	Sen	rial # <u>/:</u>	<u>518</u>	Loca	tion <u>CORRIDURS</u>	Surv	ey Are	a W			
Efficiency 33%								ose <u>Reconnaisance Lev</u>	ei Charac	terizat	ion			
MDA 12 9pp MDA 22 20pp MDA 94pp Model BC4 Model BC4 Model BC4 Model BC4 Model BC4 Model Scral # 273 Scral # 272 Scral # 273								P# 00-707-120	74					
Model BC-4 Efficiency 25% Efficiency 25% Efficiency BB				_ EII	nciency	21.0°								
Model BC-4 Efficiency 25% Efficiency 25% Efficiency BB						' /	Date	= <u>3/14/00</u> Time	/DAY	7	· · · · · · · · · · · · · · · · · · ·			
Serial # 8.7.2 Serial # 2.8.3 Serial # Cal Due #1.2.0 Cal Due #1.2	•													
Cal Due H- 2-00 Cal Due J-14-00 Bkg Si cen Bficiency 25%						$-\!$	}							
Bkg S2 CPn Bkg Efficiency 25%														
Efficiency 25% Efficiency 25% Efficiency Frint name Signature Fimp #	Pla 52 can Pla Stoom Pla													
Comments Floor / Walls <2 meters	Efficiency 25% Efficiency 25% Efficiency													
Comments Floor / Walls < 2 meters Unbased survey points 1 m² scans, 1 minute pats and swipes See map for locations RBA ONLY (SEE MAP)		MDA //O, 4 of MDA /OQ, 4 or MDA												
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$														
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$														
SURVEY RESULTS Swipe Location\Description Removable Alpha Beta Alpha Alpha Beta Alpha Beta Alpha Beta Alpha Alpha Beta Alpha Alpha Beta Alpha Alpha Beta Alpha Alpha Alpha Beta Alpha	3	3 bland Counts aloha sluta +8com (1.0.6)												
Note Location\Description Removable Alpha Beta Alpha H Results in DPM/100cm²) Alpha Beta Alpha H Results in DPM/100cm²) Alpha Beta Alpha Alpha Beta Alpha Beta Alpha Alpha Beta Alpha Beta Alpha Alpha Alpha Beta Alpha		Spring cours appear became cooper (1,0,6)												
		=			SU	RVEY	RESU	LTS						
# (Results in DPM/100cm ²) Alpha Beta Alpha # (Results in DPM/100cm ²) Alpha Beta Alpha 1. $F_{2,\infty}R$ 3 -12 684 16 F 0 30 /8 2. " 3 30 30 30 30 30 30 30 3	Swipe	Swine Location/Description Removable Total				Total	Swipe	Location\Description	Rem	ovable	Total			
2. " 3 -20 294 17 " 3 44 24 3 " 0 4 /50 18 W 0 -12 30 4 " 3 8 204 19 W 3 20 /2 5 W 0 -12 540 20 F 3 -4 48 6 " 6 20 /20 21 W 0 -28 54 7 " 0 -44 /08 22 F 0 20 30 8 " 0 /00 96 23 W 0 0 0 /2 9 F 0 60 6 24 F 0 -32 /2 10 W 3 32 /2 25 W 3 /6 36 11 W 0 -28 /2 5 W 3 /6 36 11 W 0 -8 /2 5 W 3 /6 36 11 W 0 -8 /2 27 " 0 0 /8 13 F 3 32 /2 28 " 0 7/2 36 14 W 0 -18 /2 34 30 W 3 -8 /2		(Results in DPM/	(100cm ²)	Alpha	Beta	Alpha		(Results in DPM/100cm ²)	Alpha	Beta	Alpha			
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1.	FLOOR		3	-12	684	16	/=	0	20	18			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	2.	"		3	-20	294	17	//	3	44	24			
5. W	3	<i>[1</i>		6	4	/50	18	\vee	0	-12	30			
6 " 6 JO JO JO 21 W O -28 54 7 " O -44 JO8 22 F O 20 30 8 " O JO 96 23 W O O J2 9 F O 60 6 24 F O -32 J2 10 W J J 25 W J J 6 36 11. W O -28 J2 26 F O -44 J2 12 W O 8 J2 27 " O O J8 13 F J J2 J2 28 " O 7/2 36 14. W O -28 J4 30 W J 3 -8 J2 15. F O -28 J4 30 W	4	//		3)	8	2040	19	~	3	20	12			
6 " 6 JO JO JO 21 W O -28 54 7 " O -44 JO8 22 F O 20 30 8 " O JO 96 23 W O O J2 9 F O 60 6 24 F O -32 J2 10 W J J 25 W J J 6 36 11. W O -28 J2 26 F O -44 J2 12 W O 8 J2 27 " O O J8 13 F J J2 J2 28 " O 7/2 36 14. W O -28 J4 30 W J 3 -8 J2 15. F O -28 J4 30 W	5.	W		0	-12	540	20	F	3	-4	48			
7 "				6	_			W	0	-28				
8		//		0	-44	,		F	0					
9 F	8	//		0	100	_		W	0	\bigcirc				
10 W 3 32 12 25 W 3 6 36 11. W 0 -28 12 26 F 0 -44 12 12 W 0	*** T	F		_		/		E	0	-37	ľ. l			
11. W $O = \frac{18}{12} \frac{1}{12} \frac{26}{12} F$ $O = \frac{1}{12} \frac{1}$		14/			 			\ <u>\</u>						
12 W 0 8 12 27 " 0 0 18 13 F 3 32 12 28 " 0 72 36 14. W 0 44 6 29 " 3 -8 12 15. F 0 -28 24 30 W 3 -3 -32 18								F		17				
13 F 13 J2 J2 28 " 14. W 15. F 16 J2 J4 30 W 17 J2 J6 18 J2 J2 J8 18 J2 J8 19 J2 J8 10 J2 J6 10 J7 J6 10 J7 J7 J6 10 J7 J7 J6 10 J7 J7 J6 10 J7 J7 J6 10 J7 J7 J7 J7 J7 J7 J7 J7 J7 J7 J7 J7 J7					R			11						
14. W 0 44 6 29 " 3 -8 /2 15. F 0 -28 24 30 W 3 -32 /8		F			37			//	7	-/2	,			
15. F 0-28 24 30 W 3 -32 18		14/				7		//	- 					
		F		0	-20			W			18			
		Reviewed: 2	-1500 RSSn	inervis	ion:									

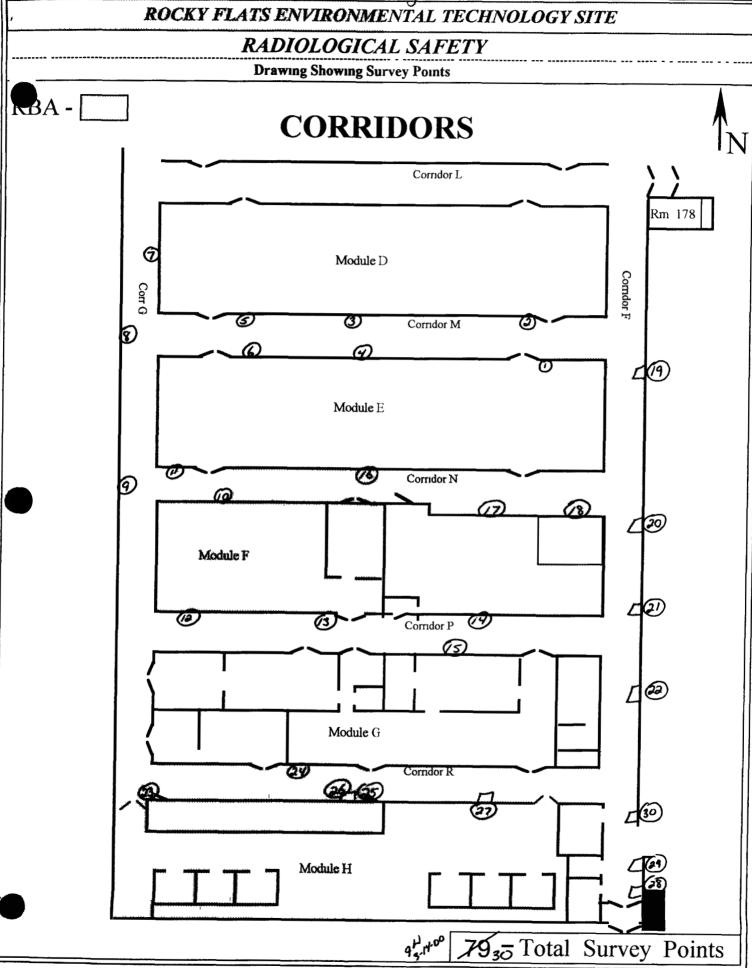
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE													
]					SAFETY							
, 						Points	D and		I m 1				
ape #	Location\Description (Results in DPM/100cm ²)	Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha	ovable Beta	Total Alpha				
31	W	0	-40	24	61								
32.	W	6	-24	18	62								
33	W	0	-16	6	63								
34	//	0	-4	24	64								
35	//	0	64	6	65								
36	11	6	8	6	66								
37	11	3	44	6	67								
38	//	0	-16	18	68								
39	"	0	12	54	69								
40	//	0	0	48	70								
41	//	0	-40	48	71								
42	//	3	28	66	72		ļ						
3	/(Ó	-24	48	73		<u> </u>						
4	//	0	-16	12	74								
45	//	0	8	24	75								
46	//	3	12	60	76		<u> </u>						
47	End of Surun				77	<u>Sy</u>							
48					75								
49					79								
50					80								
51					81								
52	A,				82								
53					83		<u> </u>						
54	M/				84								
55					85								
56					86								
57					87								
8			λ		88								
59					89								
60				<u>\</u>	90								

Rev 05/98

	ROCKY FLAIS ENVIRONMENTAL TECHNOLOGY STIE												
	IN	STRUMENT DA	ΤА				~ .		ř iku le le le le le le le le le le le le le 				
Mfg	Eberline	Mfg Eberline	_ Mf	fg NeT	îech		vey Type Contan	<u>ninatio</u>	<u>n</u>				
Mod	lel Sac-4	Model Sac-4	Mo	odel Elec	ctra	Build	ling	· · · · · · · · · · · · · · · · · · ·					
1	al # <u>849</u>			rıal # <u>_3</u> ,			tion South Corrido			y Area			
	Due <u>4-10-00</u>					Purp	ose Reconnaisance	e Level (Characte	erizati	ion		
	02 cpm	Bkg 0/ com					- ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	7 - 120	٠.				
	ciency 33%	Efficiency 33%		ficiency			P# <u>00-70</u>	1 -100	<u> </u>				
MD	A 129 dpm	MDA 115 dpm		DA <u>94</u>	dpm	Dat	e 31/4-00	Time _	/630				
Mfg	Eberline_	Mfg Eberline	_ Mf	ġ									
	del <u>BC-4</u>	Model BC-4	_	odel									
	al # <u>872</u>			rıal #									
Cal	Due <u>4-12-00</u>	Cal Due <u>7-14-00</u>		مر l Due	Xa								
	52 cpm					RCI	· N/A						
	ciency 25%		_	ficiency_		""	Print name	Signatui	re ,	/ Emp	, #		
MD.	A way dom	MDA Jon Y Jan	MI)A		<u></u>							
Com	Comments Floor / Walls < 2 meters Biased survey points												
_11	1 m ² scans, 1 minute pats and swipes See map for locations												
_3	3 bygol counts alpha electra ~8cpm (1,2,5)												
	SURVEY RESULTS												
Swipe #	Location\Desc (Results in DPM	cription //100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)		Remo Alpha	vable Beta	Total Alpha		
1	F/oor		0	-52	12	16							
2	F/oor		3	4	48	17							
3.	Floor		0	40	24	18							
4.	Floor		0	16	30	19							
5.	F/oor		0	8	12	20							
6	F/oor		0	-44	42	21							
7	Floor		3	4	30	22							
8	F/00 T		3	-20	48	23	Λ	//A					
9.	Floor		0	12	6	24	/						
10	Floor		3	36	36	25							
11.	END O	f Survey				26							
12.		/				27							
13		NA				28							
14						29							
15.						30				1			
Date :	Date Reviewed: 3-16-00 RS Supervision: From Name Signature Emp #												

	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE													
		STRUMENT DA	TA	**********										
_	Eberline	Mfg _ Eberline		[fg Ne]		_ }	rvey Type Contaminatio)n						
	del Sac-4	Model Sac-4		[odel_ <u>Ele</u>		-	ding							
	al # <u>849</u>			ernal #3		- 1	ation South Corridors		irvey A					
	Due <u>4-10-00</u>			al Due <u>7</u>		Purp	Purpose Reconnaisance Level Characterization							
Bkg	0,2 cpm	Bkg <u>a/sen</u>		kg <u>30 </u>	•	RWP# 00-707-1204								
	ciency 33%	Efficiency 33%		fficiency		-	78#							
	A 12.9 dpm	MDA 115 dpr		DA <u>99</u>	der	Dat	te <u>3/4-00</u> Time	163	0					
_	Eberline	Mfg Eberline		fg 🚤		- 🔄								
	del BC-4	Model BC-4	_	odel										
	al # <u>872</u>	Serial #_833		erial #	\/									
	Due <u>4-12-00</u>			al Due	/X 4_		,							
Bkg	52 com				+	RCT	Γ							
	ciency 25%	Efficiency 25%		ficiency	\rightarrow	.	Print name / Signati	ıre	/ Emj	p #				
	A 1104 fpm					<u> </u>								
		oment Biased su												
		nd swipes See r												
3	bkgd cou	unts alpho	<u>L</u>	lectro		<u>80pm</u>	1 (1,4,5)							
							·							
				<u>SU</u>	RVEY	RESU	LTS							
Swipe	Location\Desc	eription	Ren	novable	Total	Swipe	Location\Description	Ren	novable	Total				
#	(Results in DPM/	/100cm ²)	Alpha		Alpha	# #	(Results in DPM/100cm ²)	Alpha	Beta	Alpha				
1.	vert		3	76	36	16	Vent	0	16	60				
2.	Venq		0	-24	18	17	Drop	0	48	36				
3.	vent	_	0	-32	30	18	Chaw Vayer	6	0	12				
4	Vent		9	-8	60	19	Box	3	12	6				
_5.			90	76	54	20	Box	0	40	12				
	vent		12	24	30	21	Box	0	0	54				
7.		l'arte c	0	48	36	22	Box	0	-24	T				
8.	Door	TICALE!	0	24	60	23		0	4	42				
	Door		0	64	30	24	Cage	0	16	18				
10			3		24		Vent							
	Vent		0			25	cage	0	24	30				
	Vent			60	60	26	Box	0	-8	0				
- 1	Vent		6	-20	30	27	Box	0	-32	54				
13.	vent			25/	36	28	Box	0	-8	36				
	Vent		3	16	54	29	Box	0	-12	/8				
15.	Vent		0	-24	102	20	2		27	/0				
7	D.:	1/2:00 ps s	-											

Date Reviewed: $3 - 16 \cdot 00$ RS Supervision:



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Mfg <u>Eberline</u>	MfgEberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model_Electra
Serial # 849	Serial # 837	Serial #_/233
Cal Due <u>4-10-00</u>	Cal Due 5-17-00	Cal Due 5-11-00
Bkg O4 com	Bkg o.1 cpm	Bkg / com
Efficiency 33%	Efficiency 33%	Efficiency 17%
MDA 14.8 dpm	MDA <u>115 dpm</u>	MDA 94 dom
Mfg Eberline	MfgEberline	Mfg \
Model BC-4	Model_BC-4	Model
Serial #872	Serial # 833	Serial #
Cal Due 4-12-00	Cal Due 7-14-00	Cal Due WA
Bkg 53	Bkg Tacom	Bkg 7
Efficiency 25%	Efficiency 25%	Efficiency
MDA 113 den	MDA 1104 dom	MDA

INSTRUMENT DATA

Survey	Гуре	Contaminat	tion
Building	707		
Location	South	Corridors	Survey Area W
Purpose	Recor	inaisance Leve	el Characterization
RWP#	0	0 - 707 -	1204
		-00 Time	

Comments Ceiling / Walls > 2 meters Biased survey points

1 minute pats and swipes See map for locations
3 b Karl Counts alpha electra 18cpm (1,1,4)

SURVEY RESULTS

<u> </u>							_	_	
Swip #	Location\Description (Results in DPM/100cm ²)	Ren Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Ren Alpha	novable Beta	Total Alpha
1	. Ceiling Tile	0	28	0	16	wall	0	20	6
2		0	12	6	17	Wall	3	12	12
3	. Ceiling Vent	3	-56	12	18	Wall	0	124	6
4	. certing Tile	0	0	6	19	Wall	0	0	6
5		3	-4	/8	20	wall on Stain	0	12	18
6	Ceiling Tile	-0	8	24	21	Wall	0	20	12
7.	<u> </u>	0	52	0	22	Wall	0	-8	0
8.		3	-28	0	23	Wall	9	-32	6
9		3	4	42	24	Wall	0	-20	6
10.		0	4	18	25	Wall	6	32	12
11.	wall	3	-12	0	26	Wall	0	-4	6
12	Wall	3	48	12	27	Wall	0	-/6	0
13.	Wall	3	-8	6	28	Wall	0	12	36
14	Wall	0	-/6	6	29	Wall	0	-36	0
15	Wall	0	36	12	30	Wall	0	12	-6

Date Reviewed: 3-16-00 RS Supervision:

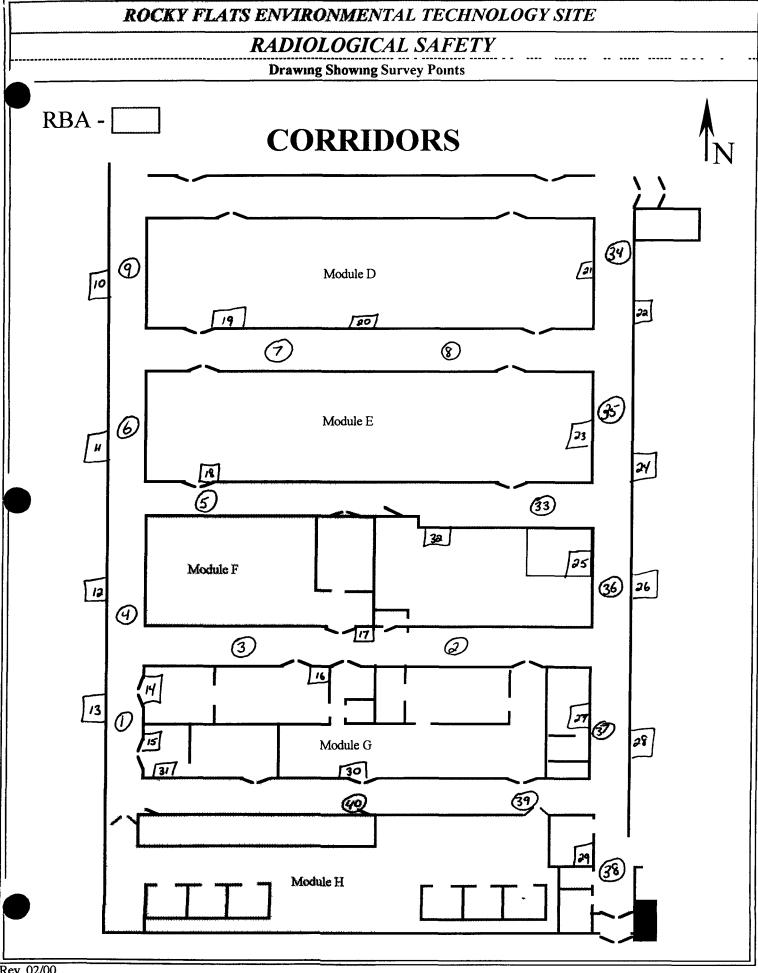
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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

'	Drawing Snowing Survey Foliats										
/ipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	vable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	ovable Beta	Total Alpha		
31	wall	3	20	0	61						
32	Wall C-N	3	20	18	62						
33	Cerlins	O	-24	0	63			/			
34	Ceiling Vent	0	12	24	64						
35	Wall C-N Ceiling Vent Ceiling Vent Ceiling Vent Ceiling Vent Ceiling Vent Ceiling Vent Ceiling Vent Ceiling Vent Ceiling Vent Ceiling Vent Ceiling Tile End of Survey	0	4	0	65						
36	Ceiling Vent	0	40	18	66						
37	Cerling Vent	0	4	6	67		<u> </u>		_		
38	Cerling Vent	0	8	/a	68						
39	Celing Vent	0	8	24	69						
40	Certing Take	0	24	12	70						
41	END OF Survey				71						
42		_			72						
43					73		 				
4					74						
45					75						
46					76	NA					
47					77						
48	/				78						
49					79						
50	N/A				80						
51					81						
52	//				82						
53					83						
54	/				84						
55	/				85						
56					86						
57					87						
8	_/				88						
- 9	/				89	/					
60	/				90						



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SURVEY PACKAGE TRACKING FORM

Package ID. 99-0002 Survey Area. X		Building 707 Survey Unit N/A		
D) 10/25/99	9/ 12/21/98	KDM 6/14/00	EMY 6/14/00	

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID. 99-0002		Building. 707		Type 3	
Survey Area X		Survey Unit N/A		Area (m²) 672	
Survey Unit Description Modules J and K, excluding rooms 146, 141, and 142 due to posting as HCA/ARA Building 707 radiological areas are posted as fixed contamination areas					osting as
Survey Type		-	Classification		
RLC Survey X	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown X
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
50	50	45	8	0	70
Building		Туре		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description					
Survey Type Classification					
RLC Survey □	FSS □		Class 1 □ Class 2 □ Class 3 □ Unknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Туре	Survey Area		
Survey Unit			Area (m²)		
Survey Unit Desc	ription	•			
Survey Type			Classification		
RLC Survey □	FSS □		Class 1 ☐ Class 2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building Type·		Type·	Survey Area		
Survey Unit		Area (m²)			
Survey Unit Description					
Survey Type			Classification		
RLC Survey ☐ FSS □		Class 1 Class 2	2 □ Class 3 □ U	Jnknown □	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
				i	

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building 707
Survey Area: X	Survey Unit· N/A
Survey Unit Description: MODULES J AND K, E. POSTING AS HCA/ARA BUILDING 707 RADIOLOG CONTAMINATION AREAS	
Building Information:	
Survey Type Reconnaissance Level Characterization St	urvey X Final Status Survey □
Building Type Type 1 🗆 Type 2 🗖 Type 3 X	
Classification Class 1 □ Class 2 □ Class 3 □ Un	known X
Contaminants of Concern Plutonium X Uranium X	Other
Justification for Classification: N/A	
Special Support Requirements: Ladder, manli- instrumentation may be required for access into	,
Special Safety Precautions: Access to overhea Review RWP requirements and surveys prior to overheads	· -
Isolation Controls:	
Level 1 Level 2 N/A X	
Labeling Requirements: NONE	
5 .	
Survey Package Implementation:	
Survey Luckuge Implementation.	_
	
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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002	Building 707		
Survey Area: X	Survey Unit N/A		
Survey Unit Description: Modules J and K, excluding rooms 146, 141, and 142 due to posting as			

HCA/ARA Building 707 radiological areas are posted as fixed contamination areas

Minimum Survey/Sampling Measurement Requirements				
Measurement	Number and Type	Comments		
ırface Actıvıty	FLOORS/WALLS < 2 meters	SEE NOTE 1		
asurements	50 <u>unbiased</u> survey points uniformly distributed throughout rooms (25 per module)	SEE NOTE 2		
	20 biased survey points at the following locations	SEE NOTE 3 SEE NOTE 4		
	- 10 points around floors adjacent to contained contamination areas/tents (where accessible)			
	- 1 point near 2 different criticality drain locations in module J and K (4 points total)			
	- 2 points near airlock to X-Y Retriever in K module			
	- Other points as determined by RCT			
	CEILINGS/WALLS > 2 meters			
	30 biased surveys (divided evenly between wall and ceiling when possible) with focus on following areas			
	- Walls behind process lines			
	- Ceilings above GB's			
	- Ceilings/walls adjacent to c-cells/tents			
	- Stained or discolored areas			
	- Walls/ceilings near GB's mounted high on walls			
	- Areas around pipe or other penetrations			
	EQUIPMENT			
	45 <u>biased</u> survey points on equipment with one or more samples from			
	- Each GB "section" extending from the main (center) GB lines			
	- Areas around stokes pumps and areas of contained localized contamination			
	- Gloveboxes which have visible leaks or contained spills beneath them			
	- 2 surveys points at each of 5 room exhaust ducts per module			
	- Bag-in/bag out ports to GB lines			
	- 5 survey points on top of overhead piping (where locations are accessible through			

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002		Building 707			
Survey Area: X		Survey Unit N/A			
	ription: Modules J and K, excluding ag 707 radiological areas are posted as f	rooms 146, 141, and 142 due to posting as xed contamination areas			
Minimum Survey/Sampling Measurement Requirements					
Measurement	Number and Type	Comments			
Surface Scanning	FLOORS/WALLS < 2 meters	SEE NOTE 1			
	70 1 m ² surface scans shall be taken at each	h SEE NOTE 2			
	location identified for surface activity measurements. Locations found above the	SEE NOTE 3			
	DCGL shall be documented	SEE NOTE 4			
	CEILINGS/WALLS > 2 meters				
	NONE				
	EQUIPMENT				
	NONE				
Media Samples	Total of 8 biased (paint) media samples ta follows	ken as SEE NOTE 5			
	- 1 sample near one of the entrances to module	each			
	1 sample around a posted HCA in each module	h			
	- 1 sample beneath GB K55 (in K Mod				
	- 1 sample beneath GB 35 (in J Modulo				
	- 1 sample near a criticality drain in eac module	Sh			
Volumetric Samples	NONE				
					
Isotopic Gamma Scans	NONE				

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (Cont)

Package (D: 99-0002	Building 707
Survey Area: X	Survey Unit N/A

Survey Unit Description: Modules J and K, excluding rooms 146, 141, and 142 due to posting as HCA/ARA Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4: Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5: For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3 PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area X	Survey Unit N/A

Survey Unit Description: Modules J and K, excluding rooms 146, 141, and 142 due to posting as HCA/ARA Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: \$9-0002	Building 707
Survey Area. X	Survey Unit N/A

Survey Unit Description: : MODULES J AND K, EXCLUDING ROOMS 146, 141, AND 142 DUE TO POSTING AS HCA/ARA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer of the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following doding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: X	Survey Unit N/A

Survey Unit Description: MODULES J AND K, EXCLUDING ROOMS 146, 141, AND 142 DUE TO POSTING AS HCA/ARA BUILDING 707 RADIOLOGICAL AREAS ARE POSTED AS FIXED CONTAMINATION AREAS

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected.
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4- Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e g, indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)



SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID 99-0002 Building		Building 707	g 707	
Survey Area	X	Survey Unit N/A		
Change #	Description		Initiator/ Date	PRE
1	Added page 6A		@ 12/2/99	M
2	Deleted per to digital	SEAN B MEAS.	12/21/99	195- VA
2		ke B' mers.	Ma 01/19/00	ABE
.3		exsed a	Da 01/18/00	ABE.
4	REPLACED 100 9,100/ pg:	0 (// 000	d 4/27/00	Kony
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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID. 99-0002	Building 707			
Survey Area: X	Survey Unit N/A	Survey Unit N/A		
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey □				
All Documentation Reviewed for Completion	RCT Supervisor	PRE		
Scan Surveys	1	b		
Total Activity Surveys	1	Em		
Exposure Rate Surveys	NA	NA		
Removable Surveys	1	Dom		
Media Samples	ADS	Egy		
Volumetric Samples	NA	NA		
All Surveys and Samples Accounted For	RCT Supervisor	PRE		
Scan Surveys	1	do-		
Total Activity Surveys	1	KOM		
Exposure Rate Surveys	NA	NA		
Removable Surveys	1	DM		
Media Samples	391	Kony		
Volumetric Samples	NA	NA		
Comments				
KESS Manager Printed Name Employee #	RESS Manager Signature	Date		

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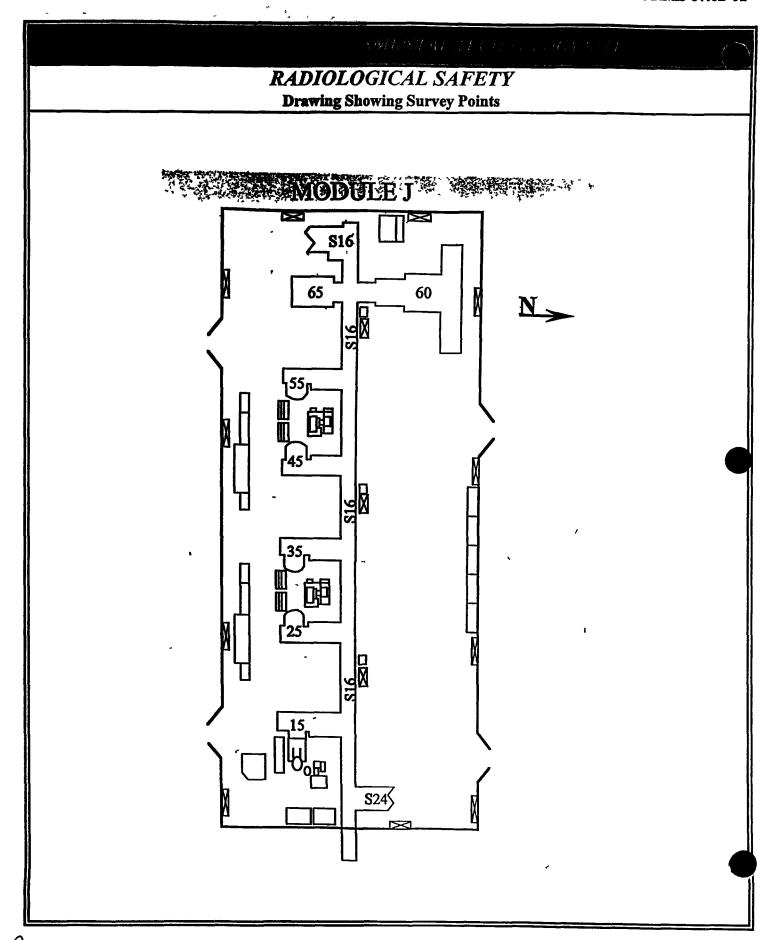
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Pg SUPERCEDED & 4/27/00 (CHANGE 4) RS FORMS 07.02-01
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	NSTRUMENT							
•			l ~ m					
Mfg.	Mfg	Mfg	Survey Type:					
Model	Model Serial #	Model	Building.					
Serial #	Serial #	Serial #	Location					
Cal Due	Cal Due		Purpose					
Bkg	\Bkg	Bkg						
Efficiency	Refficiency	Efficiency	RWP#					
MDA	MQA	MDA						
			Date	Time				
Mfg	Mfg	Mfg						
Model	Model	Model	RCT					
Serial #	Serial #	Serial #	Print name	Signature Emp				
Cal Due	Cal Due	Cal Due						
Bkg.		Bkg.	RCT	1				
Efficiency	Efficiency	Efficiency	Print name	Signature Emp				
MDA	MDA			•				
PRL#:								
Comments								
		<u>SURVEY</u> I	RESULTS					
REMOVABLE	E REMOVABLE	DIRECT DIRECT	REMOVABLE REMOVABLE	DIRECT DIRECT				
Alpha DPM/100 cm²	Beta DPM/100 cm ²	Alpha Beta DPM/100 cm ² DPM/100 cm ²	Alpha Beta DPM/100 cm ² DPM/100 cm ²	Alpha Beta DPM/100 cm ² DPM/100 cm ²				
DPM/100 cm ⁻	DPM/100 cm ²	DPM/100 cm DPM/100 cm	26\	DPM/100 cm DPM/100 cm				
2			27					
3	- 		28					
4			29					
5			30					
6			31					
7			32					
8			33					
9			34					
10			35					
11 12	-		36					
13			38 -					
14			39					
15			40	\ <u> </u>				
16			41	\ <u> </u>				
17			42					
18			43					
19			44					
20			45					
21			46					
22			47					
23			48	\				
24			49					
25			50					
Date Reviewed:	RS	S Supervision:	1	λ				
			int Name	Signature Emp				

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I	NSTRUMENT	DATA	e e e e e e e e e e e e e e e e e e e	and was a substant of the later of the substant of the substan		en generalis (1. de en e	and a transfer of the second			
Mfg.	Mfg			Survey Typ	ne:					
Model	Model			Survey Type:						
Serial #	Serial #	Serial # _		Building						
Cal Due	Cal Due	Purnose								
	Dka	Cal Due		Turposo						
Bkg	Prining	Bkg Efficienc	- RWP#							
MDA	MDA			KW1 #	· · · · · · · · · · · · · · · · · · ·					
MDA	MDA	MDA	 .	Date		Time				
Mfg	Mfg.	Mfg		Date						
Model	Model			RCT			1			
Serial #	Serial #	Serial #			rınt name	Signatu	re Emp#			
Cal Due	Cal Due			1	init name	Oignatu	ic imp#			
Bkg	Bkg	Bkg.		RCT		1	1			
Efficiency					rint name	Signatur	re Emp#			
MDA			<i></i>	1	int name	Signatur	ie Ellip#			
DEMOVARI E	PEMOVARI E	<u></u>	JRVEY F	RESULTS REMOVABLE	REMOVABLE	DIRECT	DIRECT			
REMOVABLE Alpha DPM/100 cm ² 1	REMOVABLE Beta DPM/100 cm²	Alpha	Beta M/100 cm ²	Alpha DPM/100 cm 26 27	Beta DPM/100 cm ²	Alpha DPM/100 cm ²	Beta DPM/100 cm ²			
3				28						
4				29	\overline{Z}					
5				30						
6				31						
7		-		32						
8				34		\				
10				35			·			
11				36						
12				37						
13				38						
14				39 40						
15 16				41			\			
17				42			7			
18				43						
19				44						
20		***************************************		45						
21				46 47						
22 23				48			/			
23				49						
25				50						
Date Reviewed:	R	S Supervision:_			,		,			
			D	int Name	<u>-</u>	Signature	Emp. #			

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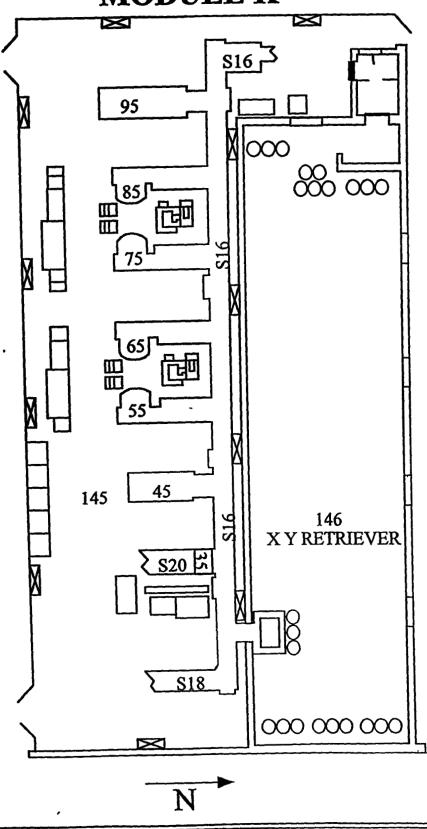
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RADIOLOGICAL SAFETY

NAMENTAL TECHNOLOGY STOL

Drawing Showing Survey Points

MODULE K



Rev. 05/98

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE **INSTRUMENT DATA** Contamination Survey Type. Mfg Eberline Mfg Eberline Mfg NeTech Building 707 Model Sac-4 Model Electra Model Sac-4 Location MODULE . J-Survey Area X Serial # 3/20 Serial # 849 Serial # 837 Reconnaisance Level Characterization Cal Due 4/10-00 Cal Due 5-17-00 Cal Due 4/26/00 Purpose Bkg O.4 CPM Bkg O.6 CPM Bkg 6.0 CPM RWP# 00-707-1204 Efficiency 21.09% Efficiency 33% Efficiency 33% MDA 14.8 dpm MDA 16.3 dpm MDA 94d/m Time DAYS Mfg Eberline Mfg Mfg Eberline Model BC-4 Model Model BC-4 Serial # 872 Serial # 833 Serial # Cal Due 4-12-00 Cal Due 7-14-00 Cal Due Bkg <u>53 CPM Bkg</u> <u>51 CPM</u> Bkg **RCT** Efficiency 25% Efficiency 25% Efficiency Print name Signature / Emp # MDA ///, 3 dpmMDA /09, 4domMDA Comments Floor / Walls < 2 meters Unbiased survey points 1 m² scans, 1 minute pats and swipes See map for locations * BKC, SMIN 14, OCPM3MIN PAT **SURVEY RESULTS**

Swipe #	Location\Description (Results in DPM/100cm ²)	Removable Alpha Beta		Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Removable Alpha Be		Total Alpha
1	FLOOR	0	-36	126.0	16	FLOOR	3	4	360
2	"	3	0	252,0	17	//	6	48	54.0
3.	"	3	24	1878.0	18	//	144	20	60.0
4.	11	3	/6	276.0	19.	11	54	-16	2244
5	11	0	-36	4800	20	11	0	-12	78,0
6	ft	0	-8	900	21	//	3	8	30.0
7	//	3	28	30.0	22	<i>''</i>	3	-24	36.0
8.	lı	0	24	72.0	23	14	0	32	18.0
9.	11	3	8	300.0	24	<i>11</i>	0	20	144.0
10.	"	3	40	144.0	25	ll .	3	-28	(6.0)
11.	"	1086	-4	2454.0	26	//	0	4	60,0
12.	"	3	12	54.0	27	"	3	8	78.0
13.	11	0	-36	30.8K	28	FLOOR *	0	16	206.0
14.	11	3		2440	29	FLOOR	3	48	12.0
15.	l)	3	36	60.0	30	11	3	-/8	54.0

Date Reviewed: 4.300 RS Supervision:

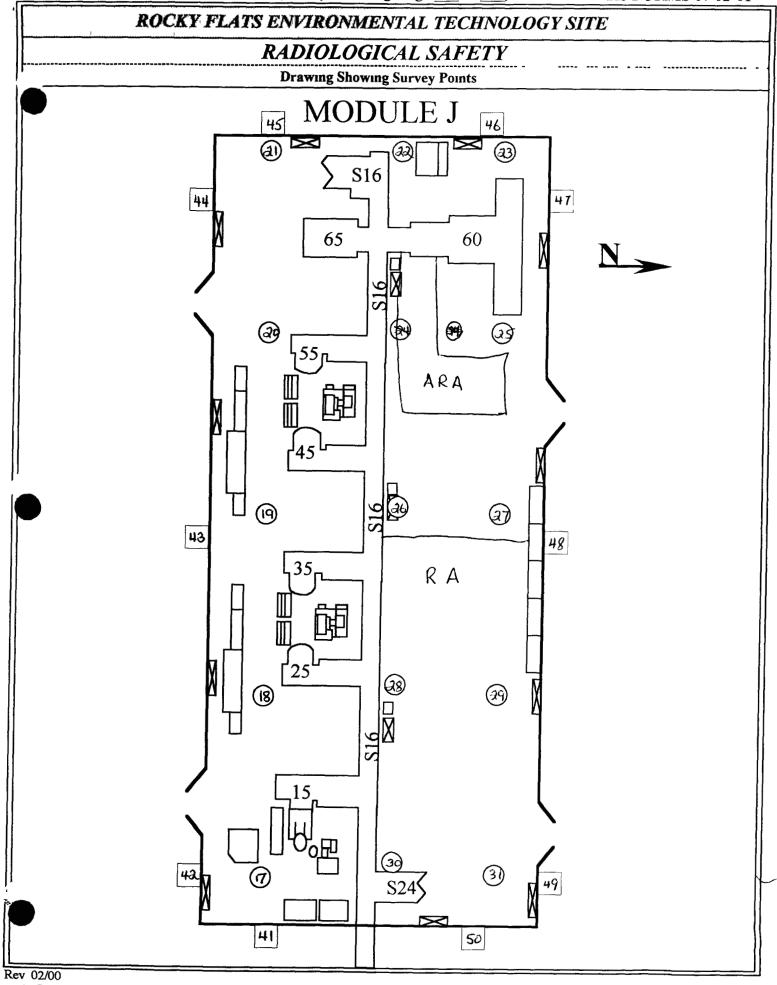
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing	Showing	Survey	Points
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Drawing Showing Survey Points											
pe	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	vable Beta	Total Alpha		
31	Floor	9	12	9120,7	61				/		
32.	WALL	3	(8)	72.0	62						
33	11	3	(ao)	Ta.o	63						
34	1)	3	(4)	(ia.o)	64						
35	1)	3	64	12.0	65						
36	11	3	(3a)	100	66						
37	11	0	(16)	(0.81)	67						
38.	19	0	4	6.0	68						
39	11	0	(8)	48,0	69						
40.	1)	0	16	24.0	70						
41	11	3	16	54.0	71						
42	11	0	98	6.0	72		/				
3	11	0	(36)	4a.0	73						
1	11	0	52	19.0	74						
45.	11	0	(8)	ia.o	75						
46	(1	0	0	1a.0	76						
47	n	3	8	18.0	77	N/A					
48	11	0	0	13.0	75						
49	11	6	(8)	150.0							
50	11	0	56	1a.0	80						
51	END OF SURVEY				81						
52					82						
53		\leq			83						
54					84						
55	NA				85						
56					86						
57					87						
	_/				88						
59	/				89						
60	/				90	/]		

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points MODULE K** 39 (13) 4 S16 38 95 (1) 000 85J 37 (b) 65 ® E 36 55 7 (5) 45 146 X Y RETRIEVER 6 35 145 S20 3 4 S18 1 **a** 000 000 000 33 32 Rev 02/00



(Survey Area Pkg Page 100 of 10)

RS FORMS 07.02-01

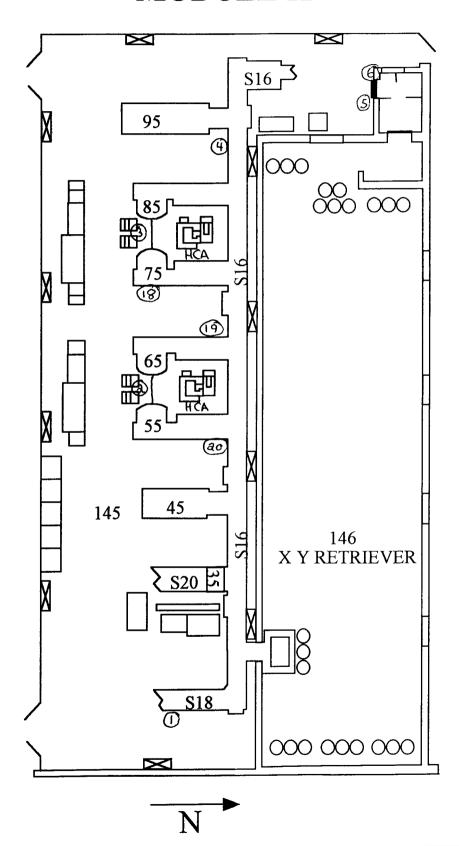
	RÖGKY TLATS ENVIRONMENTAL TECHNOLOGY SITE											
INSTRUMENT DATA In the state of the state o												
_	Eberline lel Sac-4	Mfg Eberline Model Sac-4		g <u>NeT</u> del Elec		Build	-1 -1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -					
	enal # 849 Senal # 837 Senal # 326					ion J-K Mod	Surv	ey Area	ı X			
15	Due <u>4-10-0</u> 0											
	0.6 cpm	Bkg 0.4 cpm		g <u>a 30</u>		D.117	P# 00-707-120	4				
16	ciency 33%	Efficiency 33%	-	iciency_		KW	P#					
	A 16,3 DPM	MDA 14.8 DPA)A <u>94</u>	OPM	Date	3-16-00 Time _	15	00			
Mfg		Mfg Eberline	_ Mf									
	del <u>BC-4</u> al # 872	Model BC-4 Serial # 833	_	del 1al# ^	//							
- 3	Due 4-19-00	Cal Due 7-14-00	•	Due /	//							
	56 cpm	Bkg 50CPM		,		RCT						
	ciency 25%	Efficiency 25%		iciency_		KCI	Print name / Signatur	e	/ Emp			
	A 114 1 DPm	MDA 108.4 DPm	ME			.l						
		/ Walls < 2 meter		ised sui See ma				·····				
. —	m² scans, 1 mi K Electra	nute pats and swi					(8 cpm (2, 3, 4)			——- I		
	Location			< 50 b		. 1	10 -pm (a) 0, 1)	****	12.00			
					RVEY	RESU	<u>TS</u>					
Swipe #	Location\Descri (Results in DPM/	iption	Rem Alpha	ovable Beta	Total Alpha	Swipe	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha		
·	 	eain	6	(1a)	366,0	16	Floor	3	64	114K		
\mathbf{P}_{2}^{1}	Floor	E/ 1/10	0	40	78.0	17	F1000	3		2400,0		
3	Floor		0	4	60.0	18	Floor	3	12	96 σ		
4	CRIT DR.	Aini	0	(44)	18,0	19	Floor	3	68	126,0		
5	Floor		0	(a4)	78.0		Floor *			127 Z		
6	WALL		6		42.0	21	END OF SURVEY					
7	CRIT DRA	iŊ	6	ao	78.0	22						
8	Floor		3	576	132.0	23						
9	Floor		3	(100)	420.0	24						
10	Floor		33		1aa4.0	25						
11	CRIT OR	AIN	0	(44)	30.0	26	N/A					
12	Floor		3		270.0	27						
	Floor		9	(8)	72 o	28						
14	Floor		0	4	18.0	29						
5	F1001		0	<i>3</i> 2	180.0	30				ألصي		
Date Reviewed: 4.3.00 RS Supervision								-				

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

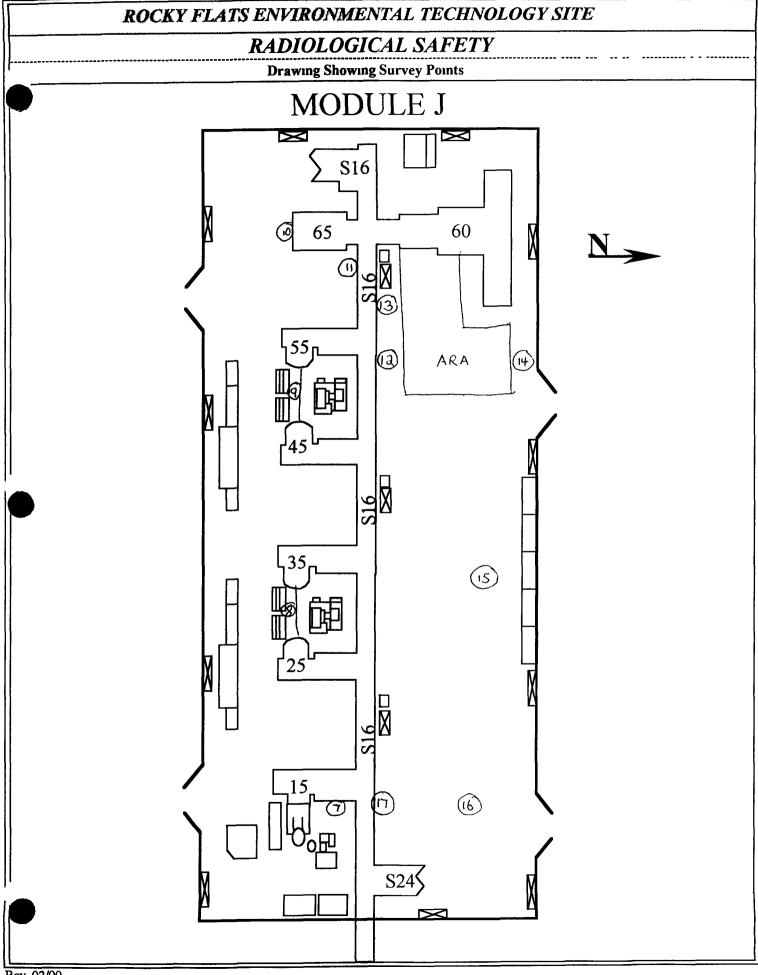
RADIOLOGICAL SAFETY

Drawing Showing Survey Points

MODULE K



Rev 02/00



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

IN	STRUMENT DATA		
Mfg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination
Model Sac-4	Model Sac-4	Model Electra	Building
Serial #_\&/2_	Serial # 849	Serial # 1389	Location Jak Module Survey Area X
Cal Due <u>9-250</u> 0	Cal Due <u>4-10-0</u> 0	Cal Due 6 2900	Purpose Reconnaisance Level Characterization
Bkg Olepm	Bkg Olbepm	Bkg /10 cpm	
Efficiency 33%	Efficiency 33%	Efficiency ,2096	RWP# 00 707 1704
MDA 11.56 pm	MDA 16.3 dpm	MDA 94 dom	Date 328-00 Time Days
Mfg Eberline	Mfg Eberline	Mfg NETech	
Model BC-4	Model BC-4	Model Electra	
Serial # <u>872</u>	Serial #_ 833	Serial # 15/8	
	Cal Due 7-14-00	Cal Due <u>6 29 0</u> E	
Bkg 52 Cpm	Bkg <i>54</i>	Bkg 2.0cpm	
	Efficiency 25%	Efficiency, 2186	
MDA /10.4 dem	MDA //2,3 dpm	MDA <u>94 dom</u>	
Comments <u>Equip</u>	oment Biased surve		184
1 minute pats an	nd swipes See maj	p for locations	
b Kad Cou	uts alpha.	Wha 180	pm

SURVEY RESULTS

<u> </u>									
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	To al Alena
1	Flange	30	44	4284	16	GB 540 Crit Drain	0	5%	1962
2	S-16 CNVYR	15	4	150	17	Air Vent # 36	0	-4	2880
H	Airvent \$20	12	16	648	18	5-16 Purple Plate	0	92	11238
4	İ	57	52	1374	19	SIL Crit Diain	0	36	1080
5	S-16 CAVYR	3	60	7392	20	5-16 CNUVR	171	12	123600
6	J456B Portal OOI	45	34	732	21	Air Vent #17	42	-40	1326
l I	Air Vent	12	36	2382	22	Moniton	0	8	810
li	GBJ45 Front Orongelart	12	4	168	23	3 Step Rollaround Stuck	9	-4	1140
9	GBJ55 Raise Switch	15	-12	11016	24	(br. + Drain Tool Storage	3	84	120
	Air Vent # 26	3	156	780		Air Vent #15	12	-12	408
	GB JL5 Portal DOOI	Ó	40	390		68 K85 under foitaloces	6	40	816
	Air Vent #28	21	8	2478		GBK95 under Pertal coll	6	36	1560c
	Dukane 35 Control	3	68	936	[5-16 CNUYRUNDER CC40	3	28	2100
	GB J60 Under Portoloo45	6	44	606	1	Platform ladden	O	-40	2676
s	An Vent #34	6	-8	800		Air Vent # 6	30	4	180
ľ	ſ					1 1 1 1			1

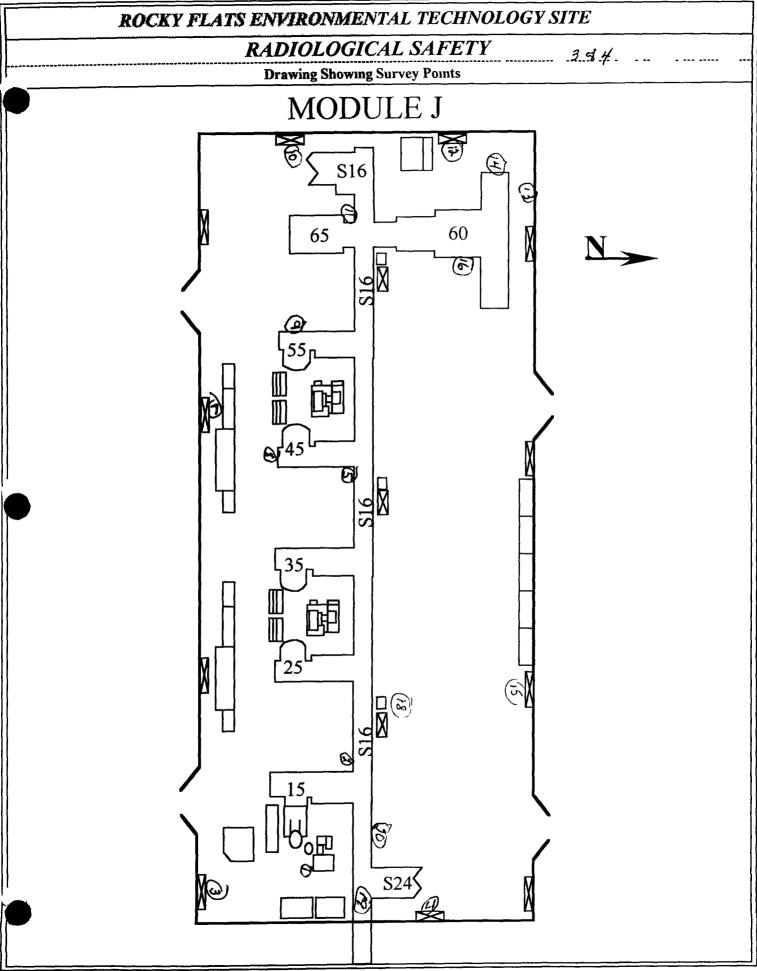
Date Reviewed 4.3.00 RS Supervision

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Prawing Shawing Survey Points

	Drawing Showing Survey Points									
Swip #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	vable Beta	Total Alpha	
31	GBK45 CNURY SIG	24	 	1344					/	
32	FOOT CONTROL	3	-16	1092	62					
33	518 CRIT Drain	30	-36	162	63					
34	S20 CRit Drain	9	4	1584	64				/	
35	Air Vent #5	30	24	834	65					
36	4 Step Rousewoodladder	3	-12	2004	66			,'		
37	AIT-K55 Hontrd Panel	384	60	396	67					
38	Wide 3 Step Stool	0	12	270	68					
39	Top Cubinet fir Verit #1	0	-12	1002	69		/			
40	Air Vert #1	15	44	402	70		% /			
41	END OF SURVEY				71	0	4			
42					72					
43					73					
44			₩/		74					
45			<i>y</i>		75					
46					76	/				
47					77					
48	/				78	,				
49	/				79	,',				
50					80					
51	/				81					
52	, ,				82_					
53	,				83	/				
54	/				84_	/				
55	/				85_	,				
56	/				86_	, , , , , , , , , , , , , , , , , , ,				
57	/				87	/				
58					88_					
59					89					
60	(90	/				



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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY भदी ५ **Drawing Showing Survey Points MODULE K** E) S16 _[95 ∞ 85 65 55 45 145 146 X Y RETRIEVER S20 (F) (F) (T) S18(% 000 000 000 F

Rev 02/00

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA							
Mfg Eberline	Mg Eberline	Mfg NeTech	Ŀ				
Model Sac-4	Model Sac-4	Model_Electra	E				
Serial # <u>£49</u>	Serial #	Serial # /233	L				
Cal Due <u>4-10-00</u>	Cal Due	Cal Due 5-11-00	P				
Bkg 0,4 Cpm	Bkg	Bkg 10 cpm					
Efficiency 33%	Efficiency 33%	Efficiency, 2063					
MDA 14.8 dp m	MDA	MDA 94 dpm					
,	•						
Mfg Eberline	Mfg <u>Eberline</u>	M(g					
ModelBC-4_	Model BC-4	Model					
Serial #_872	Serial #	Serial *					
Cal Due <u>4-12-00</u>	Cal Due	Cal Due					
Bkg <u>56 cpm</u>	Bkg	Bkg					
Efficiency 25%	Efficiency 25%	Efficiency					
MDA 114 11 dam	MDA	MDA					
Comments Ceiling / Walls > 2 meters Biased survey po							
l minute pats and swipes See map for locations							
b kopd Courts alpha Meetra 28cpm							

Survey T	ype Contaminat	ion
Building _	707	
Location	J&K Module	Survey Area X
	Reconnaisance Leve	

RWP# <u>00 707 /204</u>

Date 3-27-00 Time Days

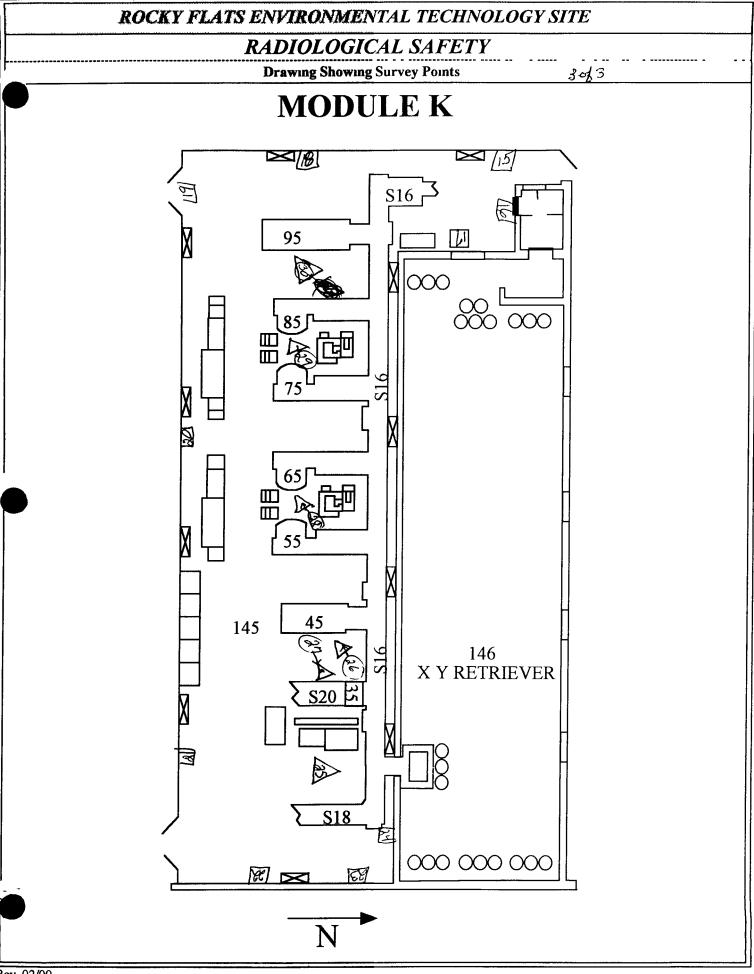
SURVEY RESULTS

5	Swipe #	Location\Description	Rem Alpha	ovable Beta	Total	Swipe	Location\Description	Rem Alpha	ovable Beta	Total
"-	Ħ	(Results in DPM/100cm ²)	Aipiia	Deta	Alpha	#	(Results in DPM/100cm ²)	Aipna	Beta	Alpha
	1	W>2m	6	4	24	16	WILM	6	4	48
	2	p 11	3	0	6	17	11 //	0	32	48
	3	n p	0	-36	12	18	11	0	32	48
	4	11 11	0	52	54	19	/! //	3	4	30
L	_5	ν <i>"</i>	0	-4	30	20	μ μ	O	12	6
	6]/]/	3	-12	30	21	11 /1	3	8	30
	7	11 11	0	-16	48	22	<i>II.</i>	3	<i>5</i> 2	30
L	8	μ μ	3	-12	18	23	u "i	O	24	42
L	9	ון ון	D	20	12	24	11 /1	3	8	54
L	10)1 N	0	24	18	25	Ceiling	3	- 18	54
L	11	11 11	0	40	42	26	11	4	52	40
	12	<i>)</i> 1	3	0	102	27	//	0	8	54
	13	11 11	0	-12	42	28	11	3	60	84
	14)/ ₁ /	6	4-0	42	29	11	0	24	72
	15	ון ון	0	0	24	30	<i>)</i> 1	0	-28	72

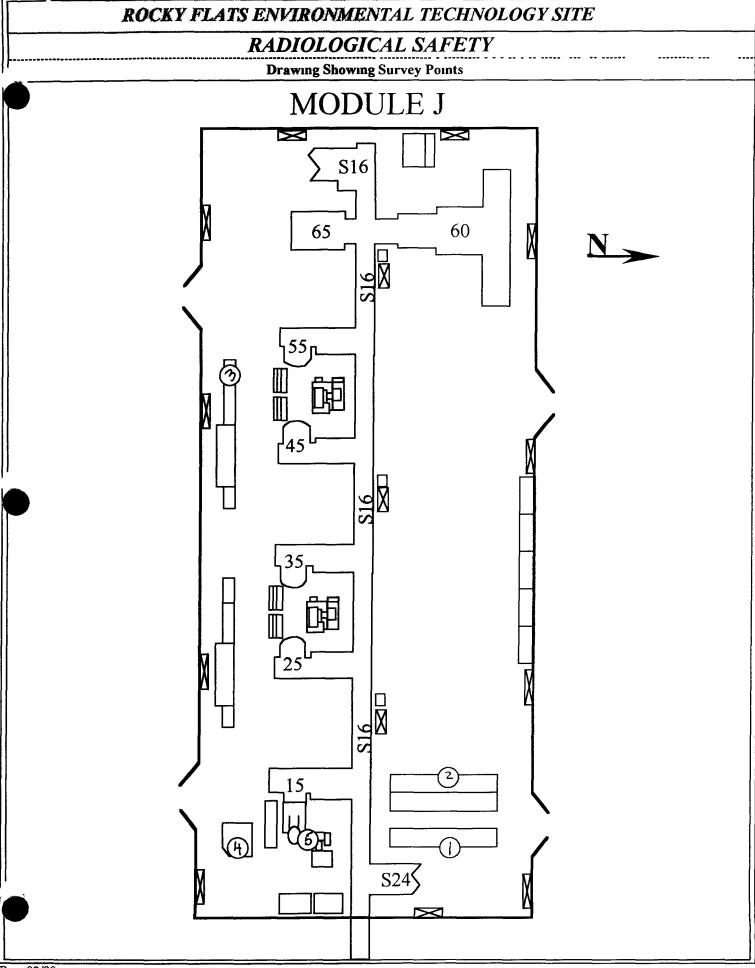
Date Reviewed 4-3-00 RS Supervision.

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		ROCKY FLA	TS E	NVIR	ONM	ENT	AL TECHNOLOGY SIT	\boldsymbol{E}	
	IN	STRUMENT DAT	ГА						<u> </u>
Mod Seria Cal I Bkg Effic MD Mod Seri Cal Bkg Effic	Eberline el Sac-4 al # 846 Due 8-15-00 O 0 cem ciency 33% A 8 2 0Pm Eberline del BC-4 al # 959 Due 7-19-00 45 cem ciency 25% A 103 4 0Pm	Mfg Eberling/ Model Sac-4 Serial # Cal Due Bkg Efficiency 13% MDA NA Mfg Eberline/ Model BC-4 Serial # Cal Due Bkg Efficiency 25%	Mf MG Ser Cal Bk Eff MI MG Ser Cal Eff MI MG Ser Cal Eff MG Ser	g NeT odel Elec ral # 3 I Due 7 g 3 C iciency DA 94 I Due 6 plat # 1 I Due 6 g 6 DA 6	265 7-3-00 2 CPm 21 01% DPM	Build Locar Purpo RW	rey Type Contamination To The Module Reconnaisance Level P# 00-707-1200 Time The Manual Contamination Print name / Signature	Survey A Characteriza	ation
		oment Biased sund swipes See i	_		ons				
		7 		SU	RVEY	RESU	LTS		
Swipe #	Location\Desc (Results in DPM/	пр t ion /100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Removable Alpha Beta	Total Alpha
1	SHELF		3	0	72	16	NA		
2	SHELF		٥	-58	66	17			
3	ELECT	CABINET	0	48	72	18			
4	CONTROL	CABINET	٥	32	192	19			
5	PIPING	-	0	-50	168	20			
6		of survey			NA	21			
7						22			
8						23			
9						24			
10						25			
11						26			
12						27			
13						28			
14						29			
15	NA					30			NA
	Reviewed 5	<u>5 00</u> rs su	ipervisi	on _					



SURVEY PACKAGE TRACKING FORM

.,	Building 707 Survey Unit N/A				
Release Date	Validation Date	Closure Date			
W/ 12/21/99	d 5/2/00	d 5/2/00			
111/19	7-7-3	//			
	Release Date	Survey Unit N/A Release Date Validation Date			

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	0002	Building 707		Type 3			
Survey Area Y Survey Unit N/A			1	Area (m²) 740			
Survey Unit Description Non-Radiological rooms 150, 150A, 150B 151A, 151B, 151C 153A, 153B, 153C, 153D, 153E, 155, 155A, 157, 159A, 159B, 159C, 159, 161, 163, 165D, 165A, 165B 165C, 165E 176, 174 172, 172A, 164, 162, 160A, 160, 158, 156, 154, 149, 152, and corridors EXCLUDES ROOMS 164, 166, 170, 178 AND 178A Building 707 radiological areas are posted as fixed contamination areas							
Survey Type			Classification				
RLC Survey X	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
129	15	30	0	0	129		
Building	<u> </u>	Туре		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Description							
Survey Type			Classification				
RLC Survey 🗖	FSS 🗖		Class I 🗖 Class	Jnknown 🗆			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре	Survey Area				
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type			Classification				
RLC Survey □	FSS □		Class 1 □ Class 2 □ Class 3 □ Unknown □				
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Description.							
Survey Type	Survey Type						
RLC Survey □	FSS □		Class 1 🗆 Class	2 □ Class 3 □ U	Jnknown 🗆		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		

Rev 9/99

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707						
Survey Area: Y	urvey Area: Y Survey Unit · N/A						
Survey Unit Description: NON-RADIOLOGICAL ROOMS 150 150A, 150B, 151A, 151B, 151C, 153A, 153B, 153C, 153D, 153E, 155, 155A, 157, 159A, 159B, 159C, 159, 161, 163, 165D, 165A, 165B, 165C, 165E, 176, 174, 172, 172A, 164, 162, 160A, 160, 158, 156, 154, 149, 152							
Building Information:							
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey 🗆						
Building Type Type 1 □ Type 2 □ Type 3 X							
Classification Class 1 🗆 Class 2 🗖 Class 3 🗖 Un	known X						
Contaminants of Concern Plutonium X Uranium X	Other						
Justification for Classification: N/A							
Special Support Requirements: Ladder, manli instrumentation may be required for access into	, ,						
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads							
Isolation Controls:							
Level 1 □ Level 2 □ N/A X							
Labeling Requirements: NONE							
Survey Package Implementation:							

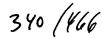
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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0002	Building 707
Survey Area: Y	Survey Unit N/A

Survey Unit Description: Non-Radiological rooms 150, 150A, 150B, 151A, 151B, 151C, 153A, 153B, 153C, 153D, 153E, 155, 155A, 157, 159A, 159B, 159C, 159, 161, 163, 165D, 165A, 165B, 165C, 165E, 176, 174, 172, 172A, 164, 162, 160A, 160, 158, 156, 154, 149, 152 and corridors <u>EXCLUDES ROOMS 164, 166, 170, 178 AND 178A</u> Building 707 radiological areas are posted as fixed contamination areas

Minimum Survey/Sampling Measurer	nent Requirements
Number and Type	Comments
FLOORS/WALLS < 2 meters 129 unbiased survey points uniformly distributed within each room, taken as follows - 3 survey points per room (2 per floor/ 1 wall only) - Remainder of survey points in corridors Biased survey points NONE CEILINGS/WALLS > 2 meters 15 biased surveys with focus on following areas - Rooms directly adjacent (shared walls) to rooms posted as RBA's (excludes corridors) - Areas/rooms previously used for egress to/from the radiological areas - Stained or discolored areas - Areas around pipe or other penetrations that cross from RBA to non-RBA's EQUIPMENT 30 biased survey points on equipment with one or more samples from - Piping/ductwork which connects with areas in the RBA - Room exhaust ducts in 5 different rooms/offices - Survey points on top of overhead piping (where locations are accessible through reach tools)	SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
	Number and Type FLOORS/WALLS < 2 meters 129 unbiased survey points uniformly distributed within each room, taken as follows 3 survey points per room (2 per floor/ 1 wall only) Remainder of survey points in corridors Biased survey points NONE CEILINGS/WALLS > 2 meters 15 biased surveys with focus on following areas Rooms directly adjacent (shared walls) to rooms posted as RBA's (excludes corridors) Areas/rooms previously used for egress to/from the radiological areas Stained or discolored areas Areas around pipe or other penetrations that cross from RBA to non-RBA's EQUIPMENT 30 biased survey points on equipment with one or more samples from Piping/ductwork which connects with areas in the RBA Room exhaust ducts in 5 different rooms/offices Survey points on top of overhead piping (where locations are accessible through



SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID· 99-0002	Building 707
Survey Area: Y	Survey Unit N/A
Survey Unit Description: Non-Radiological rooms 150	, 150A, 150B, 151A, 151B, 151C, 153A, 153B, 153C, 153D,

Survey Unit Description: Non-Radiological rooms 150, 150A, 150B, 151A, 151B, 151C, 153A, 153B, 153C, 153D, 153E, 155, 155A, 157, 159A, 159B, 159C, 159, 161, 163, 165D, 165A, 165B, 165C, 165E, 176, 174, 172, 172A, 164, 162, 160A, 160, 158, 156, 154, 149, 152 and corridors <u>EXCLUDES ROOMS 164, 166, 170, 178 AND 178A</u> Building 707 radiological areas are posted as fixed contamination areas

	Minimum Survey/Sampling Measure	ment Requirements
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters	SEE NOTE 1
	129 1 m ² surface scans shall be taken at each	SEE NOTE 2
	location identified for surface activity measurements Locations found to be above the	SEE NOTE 3
	DCGL will be noted	SEE NOTE 4
	CEILINGS/WALLS > 2 meters NONE	
	EQUIPMENT NONE	
Media Samples	NONE	
Volumetric	NONE	
Samples		
Isatania Camma	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (conf)

Package 10: 99-0002	Building. 707
Survey Areat Y	Survey Unit N/A

Survey Unit Description: Non-Radiological rooms 150, 150A, 150B, 151A, 151B, 151C, 153A, 153B, 153C, 153D, 153E, 155, 155A, 157, 159A, 159B, 159C, 159, 161, 163, 165D, 165A, 165B, 165C, 165E, 176, 174, 172, 172A, 164, 162, 160A, 160, 158, 156, 154, 149, 152 and corridors <u>EXCLUDES ROOMS 164, 166, 170, 178 AND 178A</u> Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: Y	Survey Unit N/A

Survey Unit Description: Non-Radiological rooms 150, 150A, 150B, 151A, 151B, 151C, 153A, 153B, 153C, 153D, 153E, 155, 155A, 157, 159A, 159B, 159C, 159, 161, 163, 165D, 165A, 165B, 165C, 165E, 176, 174, 172, 172A, 164, 162, 160A, 160, 158, 156, 154, 149, 152 and corridors <u>EXCLUDES ROOMS 164, 166, 170, 178 AND 178A</u> Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

Rev 9/99

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (font)

Package ID 99-0002	Building 707
Survey Area Y	Survey Unit N/A

Survey Unit Description. Non-Radiological rooms 150, 150A 150B 151A, 151B 151C, 153A, 153B, 153C, 153D 153E, 155 155A, 157, 159A, 159B, 159C, 159, 161, 163, 165D, 165A, 165B, 165C, 165E 176, 174 172, 172A 164, 162 160A, 160, 158 156, 154 149, 152 and corridors **EXCLUDES ROOMS 164, 166, 170, 178 AND 178A** Building 707 radiological areas are posted as fixed contamination areas

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radion progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e g, indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002 Building 707
Survey Area: Y Survey Unit N/A

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected.
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc)



SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0002		Building 707					
Survey Area	Survey Area Y		A				
Change #	Description	Initiator/ Date	PRE				
1	Added page GA		D 12/21/99	MIZ			
2	Daloha Ref to digital	Heras & more	M refule	ASS- W	0//2/		
2	Theplaced pa 6 to A	elete & mens	May lide	ALEW .	/ /		
3		sersel as	13/20/18/00	ff f			
4	REPLACED pg 9 w/pgs 9	7-95	d 5/2/00	ABE			
<u> </u>			-				
					-		

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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID. 99-0002	Bui	ding 707			
Survey Area: Y	Sur	Survey Unit N/A			
Survey Type. Reconnaissance Level Characterizati	on Survey	X Final Status Survey	у 🗆		
All Documentation Reviewed for Completion		RCT Supervisor	PRE		
Scan Surveys		J	d		
Total Activity Surveys)	b		
Exposure Rate Surveys		NA	NA		
Removable Surveys		J	d-		
Media Samples		NA	NA		
Volumetric Samples		NA	NA		
All Surveys and Samples Accounted For		RCT Supervisor	PRE		
Scan Surveys		1	do		
Total Activity Surveys		1	d-		
Exposure Rate Surveys		NA	KA		
Removable Surveys		λ	do		
Media Samples		NA	NA		
Volumetric Samples		NA	NA		
Comments					

596

		1 × 11 × 11 · (*) (1 (R 1) × 1	io d)nulave, "Po(Cernio)e.c)	GII STITE					
I	NSTRUMENT	DATA		The state of the s					
Mfg		Mfg	Survey Type						
(
Model	Model	Model	Duilding	Building Location*					
Serial #		Serial #	Location						
Cal Due	Cai Due	Cal Due	Purpose						
		Bkg							
Efficiency	Efficiency	Efficiency	RWP #						
MDA	MDA	MDA		5					
			Date	Time					
Mfg	Mfg Model	Mfg		•					
Model	Model	Model	RCT Print name	<u> </u>					
Serial #	Serial #	Serial #	Print name	Signature	Emp #				
Cal Due									
Bkg									
Efficiency	Efficiency	Efficiency	Print name	Signature	Emp #				
MDA	MDA	MDA							
PRL#:									
			RESULTS						
REMOVABLE Alpha DPM/100 cm ²	Beta	DIRECT DIRECT Alpha Beta DPM/100 cm ² DPM/100 cm			ECT eta				
; ——			26						
2			27						
3			27						
3			27 28 29 30						
3			27 28 29 30 31						
3 4 5 6 7			27 28 29 30 31 32						
3			27 28 29 30 31						
3 4 5 6 7 8			27 28 29 30 31 32 33 34 35						
3 4 5 6 7 8 9 10 11			27 28 29 30 31 32 33 34 35 36						
3 4 5 6 7 8 9 10 11 12			27 28 29 30 31 32 33 34 35 36 37						
3 4 5 6 7 8 9 10 11 12 13			27 28 29 30 31 32 33 34 35 36 37 38		100 cm				
3 4 5 6 7 8 9 10 11 12 13 14			27 28 29 30 31 32 33 34 35 36 37 38 39		100 cm				
3 4 5 6 7 8 9 10 11 12 13 14 15			27 28 29 30 31 32 33 34 35 36 37 38 39 40						
3 4 5 6 7 8 9 10 11 12 13 14 15			27 28 29 30 31 32 33 34 35 36 37 38 39						
3 4 5 6 7 8 9 10 11 12 13 14 15 16 17			27 28 29 30 31 32 33 34 35 36 37 38 39 40 41						
3 4 5 6 7 8 9 10 11 12 13 14 15			27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42						
3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18			27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43						
3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20			27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46						
3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22			27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47						
3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23			27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48						
3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24			27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49						
3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23			27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48						

345 /466

RADIOLOGICAL SAFETY

BOTEN TELEVILLET CON STRE

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE.

SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements.

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

1 ·	الله المالية المالية المالية المالية المالية المالية المالية المالية المالية المالية المالية المالية المالية ا	and the second second	
IN	STRUMENT DATA		
fg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination
Iodel Sac-4	Model Sac-4	Model Electra	Building 707
Serial # 846	Serial # 1270	Serial # /5/8	Location Offices Main Hall Survey Area Y
Cal Due 8-15-00	Cal Due 4-12-00	Cal Due 6-29-00	Purpose Reconnaisance Level Characterization
Bkg O.\ com Efficiency 33%	Bkg O 2 com Efficiency 33%	Bkg <u>1,0 CPm</u> Efficiency 17%	RWP# 00-707-1204
MDA 11 5 dpm	WDA 19 d 9 bw	MDA 940/m	Date 4-5-00 Time 1630
Mfg Eberline	Mfg Eberline	Mfg \	
Model BC-4	Model_BC-4	Model	T.
Serial # 872	Serial #	Serial #	
Cal Due 4-12-00	Cal Due 7-14-00	Cal Due VA	
Bkg 38 com	Bkg 41 com	Bkg	D.
Efficiency 25%	Efficiency 25%	Efficiency	
MDA 959 dem	MDA 99 2 den	MDA	
Comments Floor	/ Walls < 2 meters	Unbiased survey	points
1 m ² scans, 1 m	inute pats and swipe		

SURVEY RESULTS

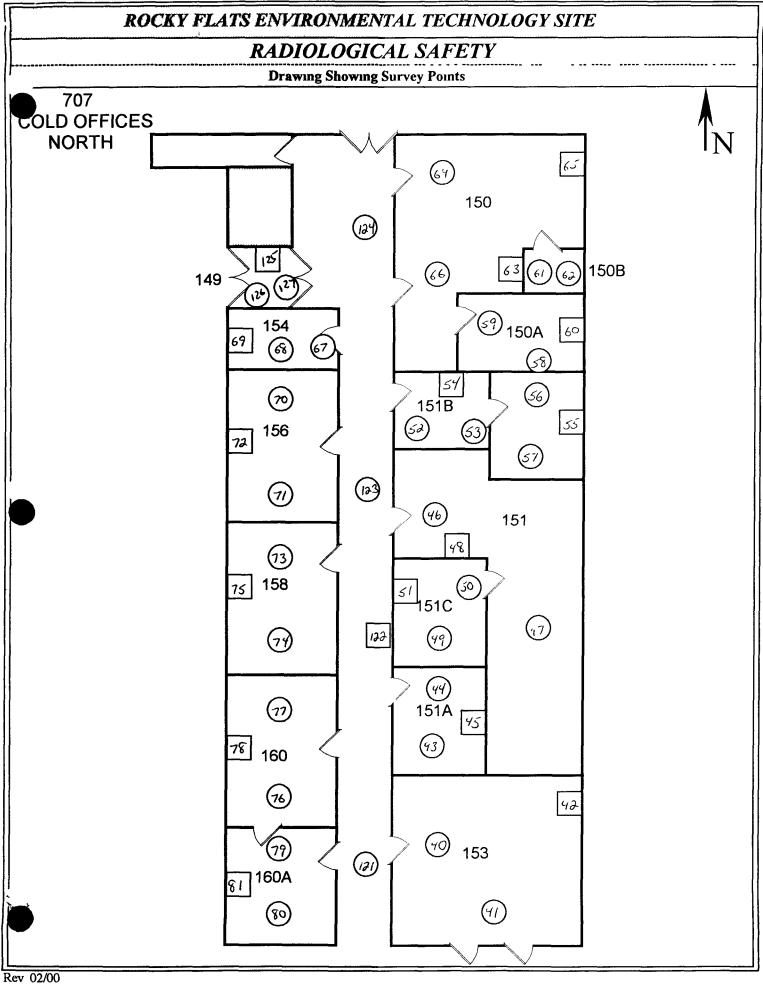
	SURVEY RESULTS								
Swipe #_	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	F	0	-60	-12	16	F	0	16	0
2	F	0	-4	36	17	F	0	44	18
3	W	0	48	42	18	W	0	-/6	12
4	F	0	36	12	19	F	0	60	0
5	F	0	48	42	20	F	0	24	36
6	W	0	4	0	21	W	0	32	18
7	F	0	-8	-6	22	F	0	20	18
8	F	0	-12	-6	23	F	0	12	30
9	W	6	-12	-6	24	W	0	-28	18
10	F	0	20	42	25	F	0	28	0
11	F	0	16	48	26	F	0	-24	6
12	W	6	-4	30	27	W	3	-12	6
13	F	0	0	/8	28	F	0	-12	24
14	F	0	0	/8	29	7	0	-16	6
5	W	0	36	6	20	lo/	0	56	-6

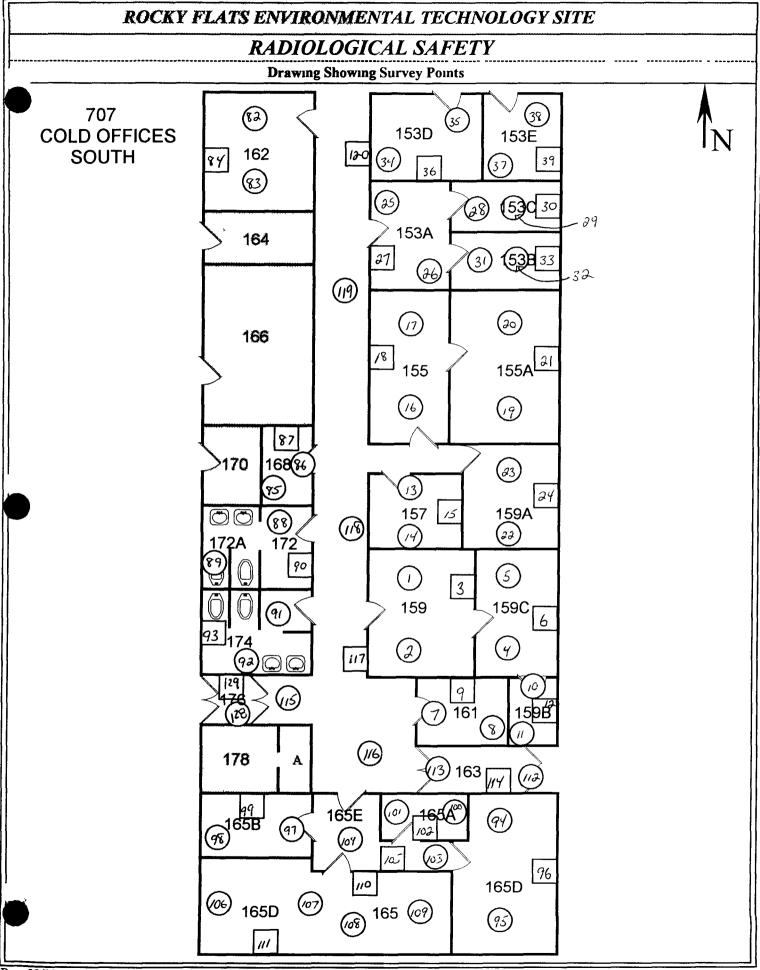
Date Reviewed. 5.2.00 RS Supervision:

ROCKY FLATS	<i>ENVIRONMENTAL</i>	TECHNOLOGY SITE

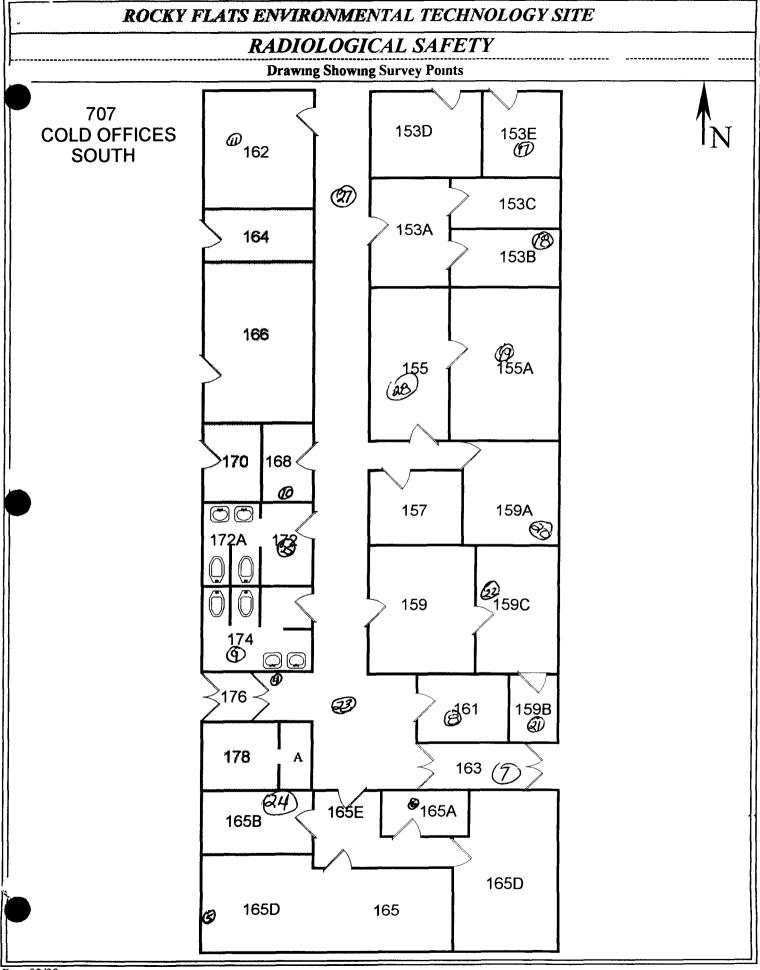
	RADIOLOGICAL SAFETY									
	Drawing Showing Survey Points									
rpe	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	
31	F	0	-4	24	61	F	0	24	12	
32	F	0	44	12	62	F	0	4	6	
33	W	0	64	18	63	W	0	32	24	
34	F	0	-8	24	64	F	0	16	6	
35	F	0	-8	6	65	W	0	4	6	
36	W	0	28	30	66	F	0	-48	12	
37	F	0	32	-24	67	F	0	44	0	
38	F	3	0	-18	68	F	0	-28	12	
39	W	0	-8	-30	69	W	0	4	18	
40	F	0	-16	-6	70	F	0	40	0	
41	F	0	-12	18	71	F	0	4	18	
42	W	0	-20	6	72	W	0	12	6	
13	F	0	16	6	73	F	0	20	18	
4	F	0	0	0	74	F	0	28	36	
45	W	0	-12	12	75	W	0	32	6	
46	Ē	0	-44	12	76	F	0	44	42	
47	<u> </u>	0	28	12	77	<u>F</u>	3	28	18	
48	W	0	-12	12	78	88 450°	0	-36	24	
49	F	0	-28	18	79	F	0	-20	30	
50	F	0	-24	24	80	F	0	44	12	
51	W	3	16	12	81	W	0	60	6	
52	F	0	4	6	82	F	0	-64	18	
53	<u>F</u>	3	0	18	83	F	0	16	0	
54	W	0	-/6	0	84	W	0	-12	0	
55	W	3	16	0	85	F	0	<i>3</i> 6	18	
56	F	0		24	86	F	3	/2	6	
57	[0	20	18	87	W	0	4	6	
3	F	0	20	24	88	F	0	-20	6	
39	F	0	44	-6	89	F	0	52	12	
60	W	0	36	6	90	W	0	12	0	

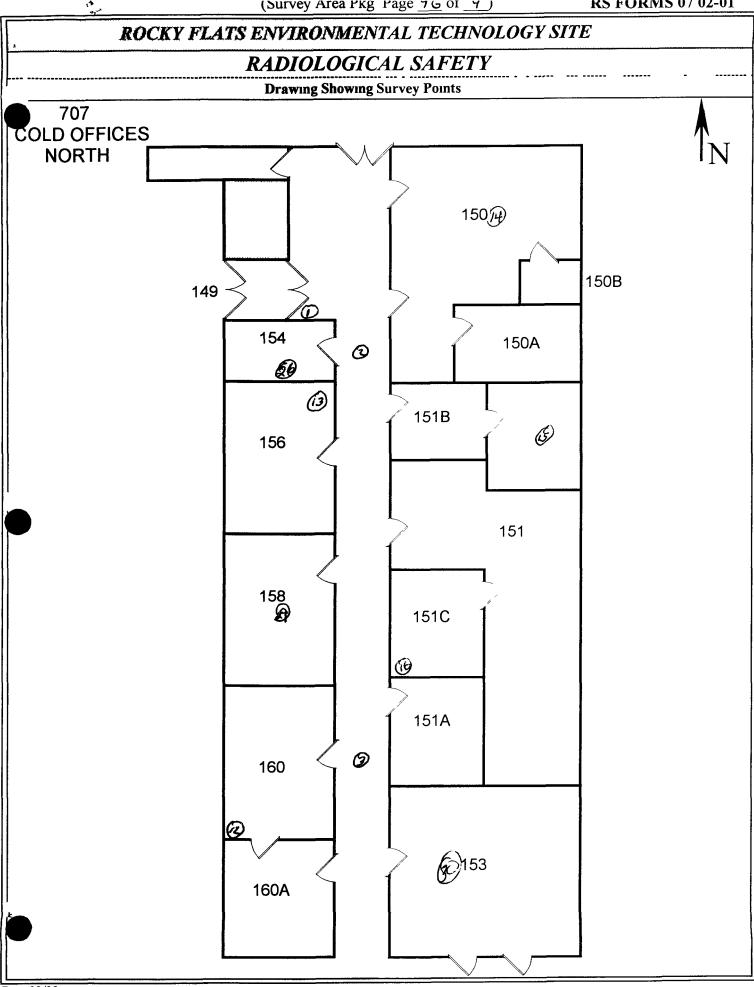
91 F O 12 O 121 F O 36 6 92 F O 16 O 122 W O 70 18 93 W O 8 12 123 F O 12 6 94 F O 10 O 125 W O -68 6 95 F O 4 O 125 W O -68 6 96 W 6 20 6 126 F O -40 0 97 F O -30 12 127 F O -56 6 98 F O -48 O 128 F O -36 -66 99 W O -8 6 129 W O 12 18 100 F O 70 36 130 END OF SURVEY M 101 F O 20 12 131 102 W O 36 24 132 103 F O 16 O 133 106 F O 20 6 136 107 F O 70 30 138 108 F O 70 6 136 109 F O 70 30 138 109 F O 70 30 138 109 F O 70 12 142 111 W 3 24 O 141 112 F O 70 12 142 113 F O 70 12 142 113 F O 70 12 142 114 W O 7 6 144 115 F O 76 0 145 116 F O 76 0 145 117 W 3 28 O 147 118 F O 76 0 148 119 F O 76 0 148 110 F O 76 0 149 111 W 3 28 O 147 115 F O 76 0 148 116 F O 76 0 148 117 W 3 28 O 147 118 F O 76 0 148 119 F O 76 0 148 110 F O 76 0 149 111 W 3 28 O 147 115 F O 76 0 148 117 W 3 28 O 147 118 F O 76 0 148	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE											
	RADIOLOGICAL SAFETY											
92 F	Tipe	Location\Description (Results in DPM/100cm ²)					Location\Description (Results in DPM/100cm ²)			Alpha		
93 W O 9 12 123 F O 12 6 94 F O O 0 124 F O 16 6 95 F O 4 O 125 W O -68 6 96 W 6 20 6 126 F O -40 O 97 F O 20 12 127 F O -56 6 98 F O -48 O 128 F O -36 -6 99 W O 78 6 129 W O 12 18 100 F O 70 36 130 END OF SURVEY M 101 F O 20 12 131 102 W O 36 24 132 103 F O 16 O 133 106 F O 20 6 136 107 F O 16 O 137 108 F O 16 O 137 109 F O 20 6 136 110 W O -12 6 140 111 W 3 -24 O 141 112 F O -70 12 142 113 F O 46 140 111 W 3 -24 O 141 112 F O 56 O 145 116 F O 56 O 145 116 F O 56 O 145 117 W 3 28 O 147 118 F O 19 F O 148 119 F O 10 O 148 110 F O 10 O 148 111 W 3 28 O 147 115 F O 56 O 148 116 F O 0 0 148 117 W 3 28 O 147 118 F O 0 0 148 119 F O 0 0 148 110 F O 0 0 148 110 F O 0 0 148 111 W 3 28 O 147 112 F O 0 0 148 115 F O 16 O 17	91	F	0	12	0	121	F		36	6		
94 F O O O 124 F O 16 6 95 F O 4 O 125 W O -68 6 96 W 6 20 6 126 F O -40 0 97 F O -20 12 127 F O -56 6 98 F O -48 0 128 F O -36 -6 99 W O -8 6 129 W O 12 16 100 F O 20 12 131 101 F O 20 12 131 102 W O 36 24 132 103 F O 16 O 133 106 F O 20 6 136 107 F O 76 O 137 108 F O 76 O 137 108 F O 76 O 137 108 F O 76 O 137 109 F O 20 6 136 100 F O 20 6 136 100 F O 20 6 140 111 W 3 -24 O 141 112 F O -70 12 142 113 F O 4 O 141 115 F O 56 O 145 116 F O 56 O 145 117 W 3 28 O 147 118 F O 70 O 148 119 F O 70 O 148 110 F O 70 O 148 111 W 3 28 O 147 111 W 3 28 O 147 111 W 3 28 O 147 111 W 3 28 O 147 111 W 3 28 O 147 111 W 3 28 O 147 111 W 3 28 O 147 111 W 3 28 O 147 111 W 3 28 O 147 111 W 3 28 O 147 111 W 3 28 O 148 110 F O 70 O 148 111 W 3 28 O 147 111 W 3 28 O 147 111 W 3 28 O 147 111 W 3 28 O 147 111 W 3 28 O 147 111 W 3 28 O 147 111 W 3 28 O 147 111 W 3 28 O 147	92	<u>F</u>	0	-12	0	122	W	0	40	18		
95 F	93	W	0	8	12	123	F	0	12	6		
96 W 6 30 6 126 F 0 -40 0 97 F 0 -30 13 127 F 0 -56 6 98 F 0 -48 0 128 F 0 -36 -6 99 W 0 78 6 129 W 0 12 18 100 F 0 40 36 130 END 6F SURVEY N 101 F 0 20 12 131 102 W 0 36 24 132 103 F 0 16 0 134 F 0 20 0 134 F 0 20 6 136 106 F 0 -20 6 136 107 F 0 16 0 137 108 F 0 40 30 138 109 F 0 28 6 139 110 W 0 -12 6 140 111 W 3 -24 0 141 112 F 0 -70 12 142 113 F 0 40 141 115 F 0 56 0 145 116 F 0 56 0 145 117 W 3 28 0 147 118 F 0 50 0 148 119 F 0 50 0 148 110 F 0 148 111 W 3 28 0 147 111 W 3 28 0 147 112 F 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	94	F	0	0	0	124	F	0		6		
97 F	95	F	0	4	0	125	W	0	-68	6		
98 F	96	W	6	20	6	126	F	0		0		
99 W O - 8 6 129 W O 12 18 100 F O 40 36 130 END OF SURVEY M 101 F O 20 12 131 102 W O 36 24 132 1103 F O 16 O 133 4 F O 20 O 134 106 F O -20 6 136 107 F O 16 O 137 108 F O 40 30 138 109 F O -28 6 139 110 W O -12 6 140 111 W 3 -24 O 141 112 F O -70 12 142 113 F O 4 143 114 W O 4 6 144 115 F O 56 O 145 116 F O 0 18 117 W 3 28 O 147 118 F O 0 0 149 119 F O 0 0 149 110 W O 148 111 W O 148 112 F O 56 O 145 113 F O 146 115 F O 56 O 145 116 F O 0 18 117 W 3 28 O 147 118 F O 0 0 148	97	<u> F</u>	0	-20	12	127	F	0				
100 F	98	F	0	-48	0	128	F	0		-6		
101 F	99	W	0	-8	6	129	W	0	12	18		
102 W O 36 24 132 103 F O 16 O 133 4 F O 20 O 134 105 W O 36 135 106 F O 30 6 136 107 F O 16 O 137 108 F O 40 30 138 109 F O 38 6 139 110 W O -12 6 140 111 W 3 -24 O 141 112 F O 70 12 142 113 F O 4 42 143 114 W O 4 6 144 115 F O 56 O 145 116 F O 56 O 145 116 F O 70 18 146 117 W 3 28 O 147 8 F 3 20 O 148 119 F O 0 149	100	<u> </u>	0	40	36	130	END OF SURVEY			NA		
103 F	101	۴	0	20	12	131				/		
105 W	102	W	0	36	24	132			/			
105 W	103	F	0	16	0	133	, W4, 1994 - W4, 1994 - W6					
106 F 107 F 108 F 109 F 109 F 100 F 10	4	<u>F</u>	0	20	0	134			/_			
107 F	105	W	0	0	36	135	and the state of t	/	_			
108 F	106	F	0	-20	6	136						
109 F 100 W 110 W 111 W 111 W 112 F 113 F 114 W 115 F 116 F 116 F 117 W 117 W 118 F 119 F 119 F 119 F 110 W 111	107	F	0	16	0	137						
110 W	108	F	0	40	30	138						
111 W 112 F 113 F 0 -90 12 142 114 W 115 F 0 56 0 145 116 F 0 0 18 146 117 W 3 28 0 147 119 F 0 0 0 149	109	F	0	-28	6	139						
112 F	110	W	0	-12	6	140						
113 F O Y 42 143 114 W O Y 6 144 115 F O 56 O 145 116 F O O /8 146 117 W 3 28 O 147 8 F 3 20 O 148 119 F O O O 149	111	W	3	-24	0	141						
114 W O Y 6 144 115 F O 56 O 145 116 F O O /8 146 117 W 3 28 O 147 8 F 3 20 O 148 119 F O O O 149	112	F	0	-40	12	142						
115 F	113	F	0	4	42	143		ļ				
116 F O O /8 146 117 W 3 28 O 147 8 F 3 20 O 148 119 F O O O 149	114	W	0	4	6	144						
117 W 3 28 O 147 8 6 3 20 O 148 119 F O O O 149	115		Ó	56	0	145						
117 W 3 28 O 147 8 F 3 20 O 148 119 F O O O 149	116	٦	0	0	18	146	/		ļ			
8 F 3 20 0 148 0 0 0 149		W	3	28	0	147						
P19 F 0 0 0 149		fø	3	20	0	148						
		Ĕ	0	0		149		ļ 				
	120	Ŵ	6	0	18	150	NA	<u></u>				





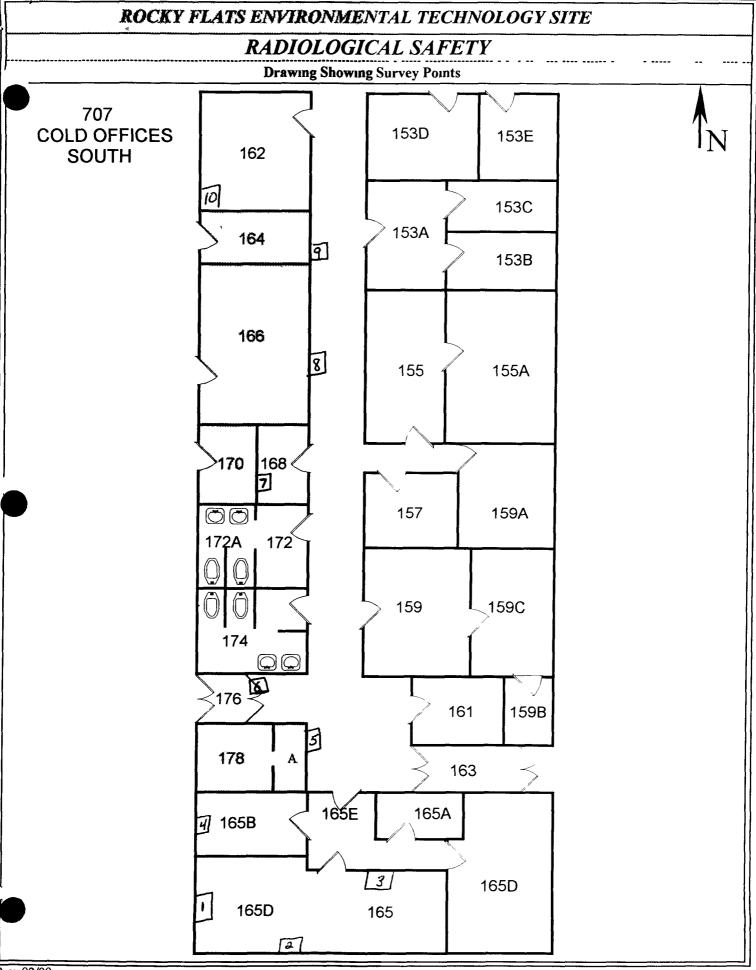
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE										
INSTRUMENT DATA										
1fg Eberline Mfg Eberline Mfg NeTech						vey Type Contamination	1			
			del Elec		1	ling 707	C11*	Ar	V	
	erial # 846 Serial # 1054 Serial # 1245			Location COLD CFFICES Survey Area Y						
	Due 8-15-00 Cal Due 8-23-00	_	Due _>		Purpose Reconnaisance Level Characterization					
-	OO CPM Bkg Ob cpm		g <u>3</u> 0		\mid _{RW}	P# NA				
1	Efficiency 33% Efficiency 33%	_	Efficiency 22.57% MDA 94 DPm			•				
MIDA	A <u>8.2 opm</u> MDA <u>163 opm</u>	= 4-26-00 Time	15c)C						
Mfg			AlgOA							
11	lel <u>BC-4</u> Model <u>BC-4</u>	_	Model							
	al # <u>959</u> Serial # <u>833</u>		erial #							
	Due 7-19-00 Cal Due 7-14-00 39 cpm Bkg 38-pm	_	Due			4.4				
-	39 cpm Bkg <u>38 cpm</u> ciency 25% Efficiency 25%		iciency		RCT	NA S		/ T		
i i	A 97. DPm MDA 95.9	_	\mathcal{A}			Print name / Signatu	re	/ Emp) #	
	ments Equipment Biased su				J					
	minute pats and swipes See			าทร						
	minute pats una swipes	mup .c.	IUVALL	/110						
			SU	RVEY	RESU!	LTS				
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	novable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	
1	overhead pupes Door 444	0	4	-18	16	PIPING	0	44	12	
2	vent-C	0	12	0	17	vent	3	24	-6	
3	vent - C	3	-20	0	18	uent	0	-12	0	
4	piping boor 333	0	-24	-6	19	vent	0	48	0	
5	piping	0	-12	0	20	PIPING	3	-52	0	
6	vent	0	-8	-12	21	PIPING	6	20	حا-	
7	vent	0	48	42	22	vent	0	-24	-12	
8	EQUIPMENT	0	24	-12	23	vent	0	-12	-6	
9	VenT	0	40	12	24	EQUIP	0	28	18	
10	SINK	0	0	-18	25	vent	6	68	-18	
11	vent	0	-32	0	26	Equep	0	12	-12	
12	uen ⁺	6	-16	-6	27	vont	0	16	12	
13	EQUIP-Piling - C	3	-/2	-12	28	UCNT	0	-/2	-12	
14	vent	0	40	0	29	vent	0	8	12	
- 5	vent	0	4							
Date Reviewed 5.4.00 RS Supervision										

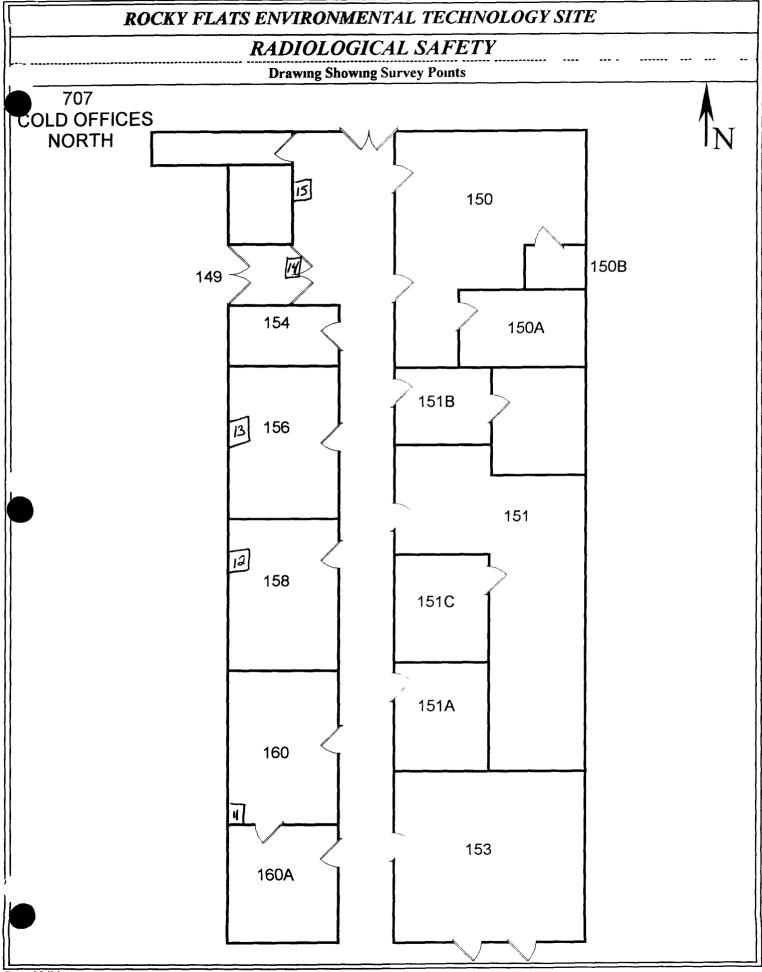




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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE												
INSTRUMENT DATA Contamination												
Mfg		Mig. V/Eberline				Survey Type Contamination						
	el Sac-4	Model Sac-4 Serial #	•				Building 707 Location 707 man Hall Survey Area V					
Call	l # <u>876</u> Due <u>8-/5-0</u> 0	\ 		Serial # <u>1233</u> Cal Due 5-11-00			Location 207 Main Idal Survey Area Y Purpose Reconnaisance Level Characterization					
I	02 con	Bkg		g <u>2</u>								
	iency 33%	Efficiency 33%		iciency		RW	P#00-707-120	4				
MDA	95 dom 18:	9MDA	MI	DA <u>94</u>	dpn	Date	e <u>7-19-00</u> Time	1630				
15	Eberline	Mfg Eberline	Mf	<u>}</u>								
Mod	lel BC-4	Model BC-4		del								
	al # <u>833</u>	Serial #		ıal #	<u> </u>							
	Due <u>7-/4-00</u>			Due λ	^							
	960 cpm ciency 25%	Bkg	Bk;	iciency_	+							
	A 1045 don	MDA NA	MI		+							
		g / Walls > 2 met			urvev	oints			 -			
		d swipes See r										
				SU	RVEY	RESU	LTS			T		
Swipe #	Location\Desci (Results in DPM/	nption 100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha		
1	see MA	2	0	-12	0	16						
\mathcal{P}_2	See MA	0	0	-24	0	17						
3	See MA	2	0	- 8	12	18						
4	See Mrf	?	0	48	0	19						
5	See Mir	D	0	44	0	20						
6	See Mr	P	3	36	0	21	MA					
7	See Min	10	0	40	0	22						
8	See MA	P	0	-40	12	23						
9	See MA	0	0	0	12	24						
10	See MA	10	0	4	12	_25						
11	See MA	0	0	12	6	26	- Marie - Mari					
12	See MA	0	0	56	0	27		<u> </u>				
13	See Ma	0	0	36	-12	28	···					
14	See Mi		0	-56	-12	29						
5	See Mi	40	٥	24								
Date	Date Reviewed 5.2.00 RS Supervision											





SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002		Building 707 (EXTERIOR/ROOF) Survey Unit N/A						
Survey Area: Z	<u></u>							
Initiator/ Date	Release Date	Validation Date	Closure Date					
J 10/25/49	भी भीयविष	120M 6/14/60	ROM 6/14/00					

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID · 99-0	0002	Building: 707 (E	XT /ROOF)	Type 3						
Survey Area Z		Survey Unit N/A	1	Area (m²) per building						
Survey Unit Description External surfaces/roof of building 707 (including roof sections 1, 2, and 3)										
Survey Type			Classification							
RLC Survey X	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown X					
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans					
37	26	0	2	0	63					
Building	<u></u>	Туре		Survey Area						
Survey Unit			Area (m²)							
Survey Unit Des	cription									
Survey Type		···	Classification							
RLC Survey □	FSS □		Class 1 □ Class	2□ Class 3□ U	Jnknown 🗆					
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans					
Building		Туре		Survey Area						
Survey Unit			Area (m²)							
Survey Unit Desc	cription									
Survey Type			Classification							
RLC Survey □	FSS □		Class 1 □ Class 2 □ Class 3 □ Unknown □							
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans					
Building		Туре	Survey Area							
Survey Unit			Area (m²)							
Survey Unit Description										
Survey Type			Classification							
RLC Survey □	FSS □		Class 1 □ Class		Jnknown 🗆					
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans					

Page superceded 5004 4/28/00 Change #4 INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002 Building 707 (XT /ROOF) Type 3			
Survey Area Z Survey Unit		Survey Unit N/A	Area (m ²) per building		
Survey Unit Description External surfaces/roof of building 707 (including roof sections 1, 2, and 3)					
Survey Type			Classification		
RLC Survey X	FSS 🗖		Class 1 Class	2 □ Class 3 □ U	Jnknown X
Random/Uniform Surface Activity Measurements	Biased Suxface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
67	46	0	2	0	113
Building	L	Туре		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Desc	cription				
Survey Type			Classification		
RLC Survey □	FSS □		Class 1 □ Class 2 □ Class 3 □ Unknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Туре		Survey Area	
Building Survey Unit		Туре	Area (m²)	Survey Area	
	cription	Туре	Area (m²)	Survey Area	
Survey Unit	cription	Туре	Area (m²) Classification	Survey Area	
Survey Unit Desc	eription FSS 🗆	Туре	Classification Class 1		Jnknown □
Survey Unit Description Survey Type	-	Type Equipment Surface Activity Measurements	Classification		Jnknown □ Surface Activity Scans
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface	Classification Class 1	2 Class 3 U	Surface Activity
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface	Classification Class 1	2 Class 3 U	Surface Activity
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements	FSS Biased Surface Activity	Equipment Surface Activity Measurements	Classification Class 1	2 □ Class 3 □ U Volumetric Samples	Surface Activity
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building	FSS Bussed Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 □ Class Media Samples	2 □ Class 3 □ U Volumetric Samples	Surface Activity
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit	FSS Bussed Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 □ Class Media Samples	2 □ Class 3 □ U Volumetric Samples	Surface Activity
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description	FSS Bussed Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 □ Class Media Samples Area (m²)	2 Class 3 U Volumetric Samples Survey Area	Surface Activity
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description Survey Type	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples Area (m²)	2 Class 3 U Volumetric Samples Survey Area	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building. 707 (EXTERIOR/ROOF)	
Survey Area: Z	Survey Unit: N/A	
Survey Unit Description: EXTERNAL SURFACES/ROOF OF BUILDING 707 (INCLUDING ROOF SECTIONS 1, 2, AND 3)		
Building Information:		
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey 🗆	
Building Type Type 1 🗖 Type 2 🗖 Type 3 X		
Classification Class 1 Class 2 Class 3 Un	known X	
Contaminants of Concern Plutonium X Uranium X	Other 🗆	
Justification for Classification: N/A		
Special Support Requirements: Ladder, manli instrumentation may be required for access into	-	
Special Safety Precautions: Access to roofs, s buildings may require additional approvals from commencing surveys	· ·	
Isolation Controls:		
Level 1 □ Level 2 □ N/A X		
Labeling Requirements: NONE		
Survey Package Implementation:		
	9	
O .		
	7	

Package ID: 99-0002	Building 707 (EXTERIOR/ROOF)
Survey Area· Z	Survey Unit N/A
C	Charleton 707 (analysis and 2)

Survey Unit Description: External surfaces/roof of building 707 (including roof sections 1, 2, and 3)

Measurement	Number and Type	Comments
urface Activity	ROOF/EXTERIOR WALLS	SEE NOTE 1
feasurements •	37 unbiased survey points uniformly distributed	SEE NOTE 2
	as follows	SEE NOTE 3
	- 12 survey points per exterior wall sections around building at an elevation < 2 meters	SEE NOTE 4
	- 25 survey points on section 1, 2 and 3 of roof	
	26 biased survey points	
	- 2 survey points each of 3 different roof drains/downspouts on /near ground level	
	- 20 survey points distributed among the	
	following locations roof exhaust vents/duct work and capped roof openings	

Page Survey PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 99-0	002 B	ulding 707 (EXTERIOR/ROOF)	
Survey Area: Z		ey Unit N/A	
survey Unit Description: External surfaces/roof of building		lding 707 (including roof sections 1, 2, and 3)	
	Minimum Survey/Sampling Me	asurement Requirements	
Measurement	Number and Type	Comments	
Surface Activity Measurements	ROOF/EXTERIOR WALLS 67 unbiased survey points uniformly distriated follows - 3 survey points per each exterior wall section around building at an elevation meters (18 points total) - 8 survey points on section 1 of roof, survey points on section 2 of roof, and points on section 3 of roof (49 points) 46 biased survey points - 2 survey points each of 3 different rood drains/downspouts on /near ground left of lowing locations roof exhaust very work and capped roof openings	SEE NOTE 3 SEE NOTE 4 SEE NOTE 4	

Package ID: 99-0002	Building. 707
Survey Area: Z	Survey Unit N/A

Survey Unit Description: External surfaces/roof of building 707 (including roof sections 1, 2, and 3)

Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	ROOF/EXTERIOR WALLS	SEE NOTE 1
	63 1 m ² surface scans shall be taken at each	SEE NOTE 2
	location identified for surface activity measurements Locations found to be above the	SEE NOTE 3
	DCGL will be noted	SEE NOTE 4
Media Samples	Total of 2 biased roof material samples taken as follows	SEE NOTE 5
	- Two samples taken near ventilation ductwork/plenum exhausts on roof sections 2 and 3	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Package ID: 99-00	002	Building 707	
Survey Area: Z		Survey Unit N/A	
Survey Unit Descr	ription: External surfaces/roof of	building 707 (including roof sections 1, 2, and 3)	
	Minimum Survey/Sampling N	Measurement Requirements	
Measurement	Number and Type	Comments	
Surface Scanning	ROOF/EXTERIOR WALLS 113 1 m ² surface scans shall be taken at location identified for surface activity measurements. Docations found to be a DCGL will be noted	COR NOTE 2	
Media Samples	Total of 2 biased roof material same taken as follows - Two samples taken near ventile ductwork/plenum exhausts on sections 2 and 3	ation	
Volumetric Samples	NONE		
Isotopic Gamma Scans	NONE		

RSFORMS-16.01-8

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area: Z	Survey Unit N/A

Survey Unit Description: External surfaces/roof of building 707 (including roof sections 1, 2, and 3)

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling.
 If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample.
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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Package ID: 99-0002	Building 707
Survey Area: Z	Survey Unit N/A

Survey Unit Description: External surfaces/roof of building 707 (including roof sections 1, 2, and 3)

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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Package ID. 99-0002	ulding 707
Survey Area. Z	rvey Unit N/A

Survey Unit Description: External surfaces/roof of building 707 (including roof sections 1, 2, and 3)

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and regative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area
- 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are whitten on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building: 707
Survey Area: Z	Survey Unit N/A

Survey Unit Description: • External surfaces/roof of building 707 (including roof sections 1, 2, and 3)

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4- Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID:	99-0002	Building 707 (EXTERIOR/ROOF)					
Survey Area.	Z	Survey Unit N/A					
Change #	Description	Initiator/ Date	PRE				
1	Added page 6A	ala va	@ 12/21/99	MIZE			
	01135611	Sear 15 mins.	Man marily	ABE Ma			
2	DILL Replaced PA 6		10 rolpolas	HA			
3	Product specific to 13	meas	an ach la	1835			
4	Roland page 2 w revis	nevised pg	A port de la la la la la la la la la la la la la	1			
5		un page o o	1 128/00	1			
6		d page	14/28/00	1			
	04.1	2 page	100M 4/23/00	1			
7	Ripland page 9 w/ pages 9-	4	120M / 5/9/00	d			
	<u> </u>						
			 				
			<u> </u>				

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Bu	ıldıng 707 (EXTERIO	R/ROOF)			
Survey Area: Z	Su	Survey Unit N/A				
Survey Type: Reconnaissance Level Characterization	on Surv	ey X Final Status Surve	у 🗆			
All Documentation Reviewed for Completion		RCT Supervisor	PRE			
Scan Surveys		Flac El guyer	- KMW			
Total Activity Surveys		200 Etaujer	Bom			
Exposure Rate Surveys		NA	NA			
Removable Surveys		De Buyer	BOM			
Media Samples		OUS	KOM			
Volumetric Samples		NA	NA			
All Surveys and Samples Accounted For		RCT Supervisor	PRE			
Scan Surveys		3don Deuge	Lagen			
Total Activity Surveys		Dec Curpe	Kow			
Exposure Rate Surveys		NA	NA			
Removable Surveys		3 Coc Stranger	#OM			
Media Samples		1991	DM			
Volumetric Samples		NA	NA			
Comments.						
			(11/00			
			/22/00			
			114/00			
			- Jane			

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Mfg	Mfg		Survey Tyne	
Model	Model	Model	Survey Type:	
Serial #	Serial #		Location*	
Cal Due	Cal Due	Cal Due	Purpose	
Bkg			Tupose	
Efficiency	Bkg	Bkg Efficiency	RWP#	
MDA	MDA	MDA	KWI #	
MDA	MDA	\ \ \ \	Date	Time
Mfg	Mfg	Mfg	Date	
Model	Model	Model	RCT	,
Serial #	Serial #		Print name	Signature Emp #
Col Due	Cal Due	Cal Que	- I Thit hame	Signature Emp #
Cal Due	Car Due		RCT	,
Bkg	Bkg Efficiency		Print name	Signature Emp #
Efficiency MDA	MDA		1 Thit hame	Signature Emp #
PRL#:Comments			DECITIES	
REMOVABLE	REMOVABLE	SURVEY I	RESULTS REMOVABLE REMOVABLE	DIRECT DIRECT
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25		Alpha Beta PM/100 cm² DPM/100 cm²	Alpha DPM/100 cm² DPM/100 cm² 26	Alpha Beta DPM/100 cm²
Date Reviewed:	RS 8	Supervision:	unt Name	Stornatura Emp #

PRINTENT TOP CHANGEOUT STOP

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE.

SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

(1) Rev 05/98

FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA							
fg Eberline	Mfg. Eberline	Mfg NeTech.					
Model Sac-4	Model Sac-4	Model Electra					
Serial # 846	Serial # 1054	Serial # 3260					
Cal Due 8-15-00	Cal Due 8-23-00	Cal Due 7-17-00					
Bkg 0.2 con	Bkg 0.4 -00	Bkg 2 cm					
Efficiency 33%	Efficiency 33%	Efficiency 17%					
MDA 129 don	MDA 14.8 dam	MDA 94 don					
Mfg Eberline	Mfg Eberline	Mfg Ne Tech					
Model BC-4	Model BC-4	Model Electra					
Serial # 959	Serial #_ 833	Serial 15/8					
Cal Due >-19-00	Cal Due 7-14-00	Cal Due 6-29-0					
Bkg yo ear	Bkg 45 ear	Bkg /con					
Efficiency 25%	Efficiency 25%	Efficiency 17%					
MDA 78.1	MDA 1025 don	MDA 94 dom					

Survey	Type·	Conta	minatio	on
Building	707			
			701	
Purpose	Reco	nnaisan	ce Level	Characterization
RWP#	00	- 707	-1204	
D-4-	J-2-	00	Timo	1630

Comments Roof / Exterior Walls < 2 meters Unbiased survey points

1 m² scans, 1 minute pats and swipes See map for locations

1-25 roof

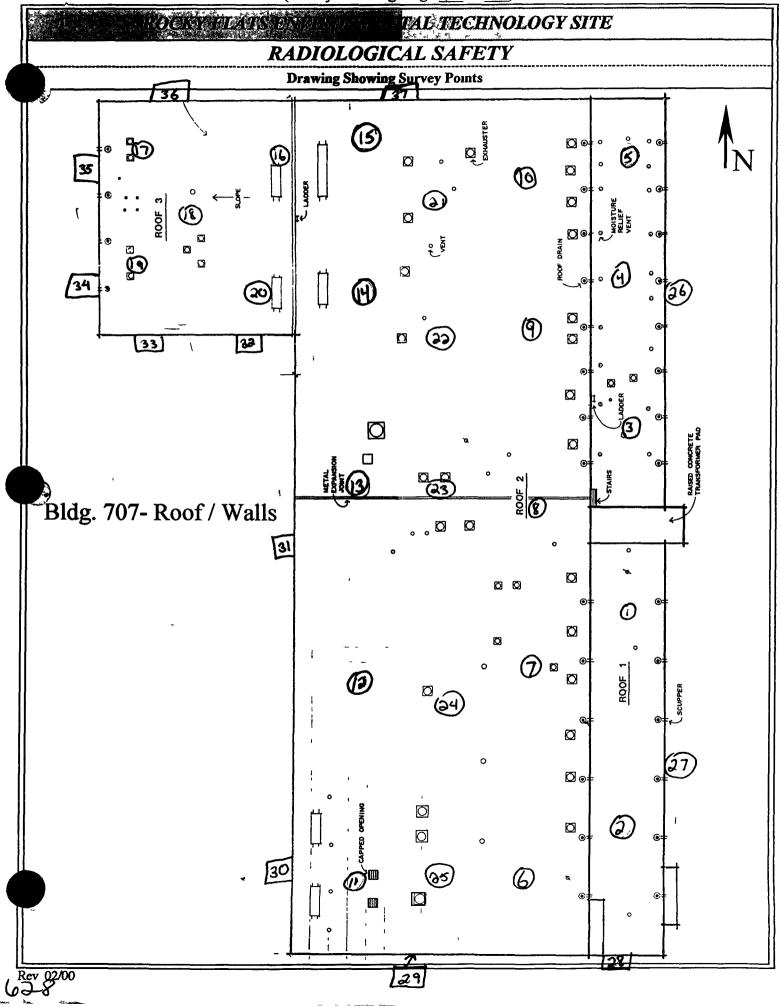
26-37 Wall < 2 meters

SURVEY RESULTS

Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
\mathcal{D}_1	See Mip	0	8	48	16	See Map	3	-36	24
2	See MAD	0	4	54	17	See Map	0	12	36
3	See MAD	0	-32	36	18	See MAD	3	-28	54
4	See Muse	3	-28	36	19	See Map	0	-16	30
5	See MAD	0	8	42	20	See Mrs	3	-12	24
6	See Mas	0	-16	30	21	See Map	0	-20	36
7	See MAP	0	-36	24	22	See Map	0	20	18
8	See MAP	3	-/6	96	23	See Map	0	-32	42
9	See MAP	0	-40	60	24	See Map	0	-20	36
10	See Map	0	20	18	25	See Mas	0	-20	66
11	See MAP	0	-32	36	26	See Map	9	-20	54
12	See App	0	-8	54	27	See MAP	0	-12	18
13	See MAD	0	-20	24	28	See MAP	0	-48	48
4	See Mas .	0	-28	42	29	See Map	0	- B	78
5	See MAP	0	24	72	30	Lag Mino	0	-20	66

Date Reviewed. <u>5-800</u> RS Supervision

RADIOLOGICAL SAFETY Drawing Showing Survey Points										
wipe	Location\Description (Results in DPM/100cm ²)	Remo	vable	Total	Swipe	Location\Description (Results in DPM/100cm ²)	Remo Alpha	ovable Beta	Tota Alph	
# 21	. ^	Alpha	Beta -28	Alpha 78	# 61	(Results in DPM/100cm ²)	Aipha	Deta	Aipi	
31	See MAP	3	4		61	IVA				
32	See Map			66	62					
33	See Map	0	32	54	63	\	 		 	
34	See Map	0	-32	78	64	 			┢	
35	See Map	0	28	78	65			 		
36	See MAP	6	-/6	72	66		+		-	
37	END OF SULVE	0	-16	54	67		-			
38	END OF SULVE	V		NX	68				-	
39				/	69			 		
40		<u> </u>	 	1	70			<u> </u>	-	
41			 /		71					
42			/_		72			 		
3		 /	<u> </u>		73			<u> </u>	_	
44					74			ļ	_	
45		/_			75					
46		<u>/</u>			76			<u> </u>		
47					77					
48					78		1			
49					79		Λ			
50					80		\prod			
51	/				81					
52					82					
53					83					
54					84					
55					85		1			
56					86		-			
<u>50</u>			 		87					
3	•				88				1	
59	/				89		1		\vdash	
60	NA	 			90		+		N	



ROCKT PLATSEAL TROMMENTAL TECHNOLOGY SITE

INSTRUMENT DATA							
fg. Eberline	Mfg Eberline	Mfg NeTech.					
Model Sac-4	Model Sac-4	Model Electra					
Serial # 896	Serial # 1054	Serial # 3260					
Cal Due 7-15-00	Cal Due 8 - 23 - 00	Cal Due 1-17-00					
Bkg 02 com	Bkg orepa	Bkg 2 con					
Efficiency 33%	Efficiency 33%	Efficiency 17%					
MDA 129 dom	MDA 148 dpm	MDA 94 dem					
Mfg Eberline	Mfg Eberline	Mfg AcTech					
Model BC-4	Model_BC-4	Model Electra					
Serial # 959	Serial # 833	Serial #_1518					
Cal Due 7-19-00	Cal Due 7-14-00	Cal Due 6-29-00					
Bkg go .pn	Bkg 45 son	Bkg /com					
Efficiency 25%	Efficiency 25%	Efficiency 17%					
MDA 98.1 don	MDA 103.5 do	MDA 94 dem					
O Dead	/ T XX-11- T						

Survey	Гуре	Contamir	nation
Building	707		
Location	Roof	Exterior	Survey Area Z
Purpose	Rece	onnaisance I	evel Characterization
RWP#		0-707-12	

Date <u>5-3-00</u> Time <u>/630</u>

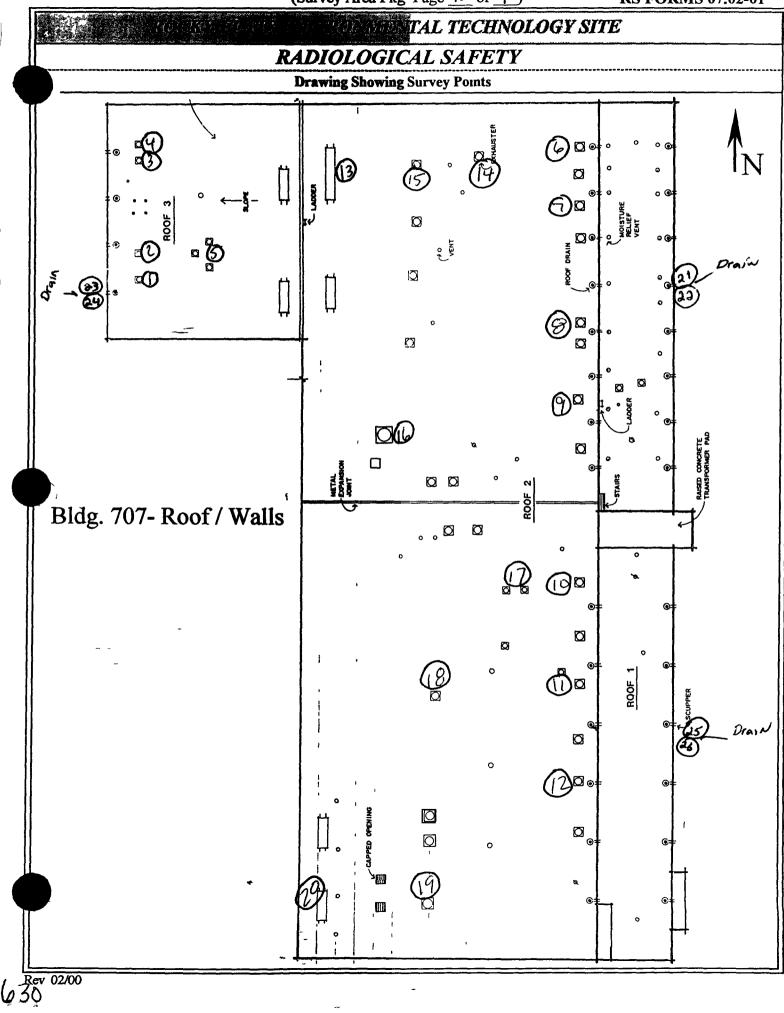
Comments Roof / Exterior Walls Biased survey points

1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe	Location\Description	Rem	ovable	Total	Swipe	Location\Description	Rem	ovable	Total
#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
\mathcal{D}_1	See MAP	0	16	162	16	see Map	3	-24	36
2	See Map	0	40	90	17	see My	0	36	30
_3	See MAP	_3	-4	90	18	see MAD	0	-32	60
4	See MAD	3	-24	90	19	See Map	0	-4	102
5	See Map	0	56	54	20	See Map	0	-28	36
6	See MAD	9	-64	36	21	See MAD	0	36	124
7	See Map	O	-8	36	22	See MAD	0	4	102
8	See MAP	3	-8	42	23	See Map	0	-32	60
9	See MAP	3	32	24	24	See Map	3	0	72
10	See MAP	0	-36	54	25	See Mrg	0	-4	18
11	See MAP	0	-8	66	26	See MAP	3	12	36
12	See MAD	0	-24	48	27	END OF Survey			νA
13	See Map	0	-16	120	28				
4	See MNP .	Ó	-8	48	29				
215	See Mrs	0	12	84	30	NA			

Date Reviewed. <u>5-8-00</u> RS Supervision.



SURVEY PACKAGE TRACKING FORM

	Building 708, 708S Survey Unit N/A					
Release Date	Validation Date	Closure Date				
91) 12/21/99	EDM 6/14/00	20mg 6/14/00				
	11/1/-	Survey Unit N/A Release Date Validation Date				

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	002	Building 708, 70	08S	Type 1			
Survey Area AA Survey Unit N/A			A Area (m ²) 662				
Survey Unit Description Interior of Building 708 and Building 708S (breathing air compressor on skids)							
Survey Type			Classification				
RLC Survey X	FSS □		Class 1 Class:	2 □ Class 3 □ U	Jnknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
30	34	35	2	0	34		
Building		Туре		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Desc	ription						
Survey Type			Classification				
RLC Survey □	FSS □		Class 1 □ Class 2 □ Class 3 □ Unknown □				
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре	Survey Area				
Survey Unit			Area (m²)				
Survey Unit Desc	ription						
Survey Type			Classification				
RLC Survey □	FSS 🗆		Class 1 □ Class 2 □ Class 3 □ Unknown □				
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре		Survey Area	A STATE OF THE STA		
Survey Unit			Area (m²)				
Survey Unit Description							
Survey Type			Classification				
RLC Survey □	FSS □		Class 1 Class 1	2 □ Class 3 □ U	Jnknown 🗆		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002 Building 708, 708S					
Irvey Area: AA Survey Unit: N/A					
Survey Unit Description: INTERIOR OF BUILDING 708 AND BUILDING 708S (BREATHING AIR COMPRESSOR ON SKIDS)					
Building Information:					
Survey Type Reconnaissance Level Characterization	Survey X Final Status Survey □				
Building Type Type 1 X Type 2 Type 3					
Classification Class 1 Class 2 Class 3 U	nknown X				
Contaminants of Concern Plutonium X Uranium X	Other				
Justification for Classification: N/A					
Special Support Requirements: Ladder, man instrumentation may be required for access into	•				
Special Safety Precautions: Access to roofs, buildings may require additional approvals from commencing surveys	stairs, or elevated structures external to m security personnel Verify approvals prior to				
Isolation Controls:					
Level 1 🗆 Level 2 🗆 N/A X					
Labeling Requirements: NONE					
Survey Package Implementation: N/A					
RESS Manager Printed Name Employee # RE	SS Manager Signature				



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Package ID: 99-0002		Building 708, 708S		
Survey Area: AA		Survey Unit N/A		
Survey Unit Desc skids)	ription. Interior of Building 708 a	nd Building 708S (breathing air compressor on		
	Minimum Survey/Sampling N	leasurement Requirements		
Measurement	Number and Type	Comments		
Surface Activity Measurements	FLOORS/WALLS < 2 meters 30 unbiased survey points uniformly distributed building 708 4 biased survey points near the drums state center of room (posted as RMA) in 1708 CEILINGS/WALLS > 2 meters 30 biased surveys as determined by RC EQUIPMENT 25 biased survey points on equipment we Building 708 as determined by RCT 10 biased survey points on skid mounted breathing air compressor (Building 708)	SEE NOTE 3 SEE NOTE 4		

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Package ID: 99-0002	Building 708, 708S
Survey Area: AA	Survey Unit N/A
C II A D A I. A CD 11 700	1 D11 7000 (141

Survey Unit Description: Interior of Building 708 and Building 708S (breathing air compressor on skids)

Minimum Survey/Sampling Measurement Requirements					
Measurement	Number and Type	Comments			
Surface Scanning	FLOORS/WALLS < 2 meters 34 1 m² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted. CEILINGS/WALLS > 2 meters. NONE. EQUIPMENT. NONE.	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4			
Media Samples	Total of 2 biased (paint) media samples taken as follows - 1 sample near the posted Radioactive Material Area (RMA) at center of room in Building 708 - 1 sample from random area within building 708	SEE NOTE 5			
Volumetric Samples	NONE				
Isotopic Gamma Scans	NONE				

Package ID: 99-0002	Building 708, 708S
Survey Area: AA	Survey Unit. N/A
Common III Documenton Intonion of Duilding	700 1 D 11 700C (1

Survey Unit Description Interior of Building 708 and Building 708S (breathing air compressor on skids)

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media."

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample.
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3 PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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Package ID: 99-0002	Building 708, 708S			
Survey Area: AA	Survey Unit N/A			
Survey Unit Description Interior of Ruilding 708 and Ruilding 708s (breathing air compressor on				

Survey Unit Description Interior of Building 708 and Building 708S (breathing air compressor on skids)

Survey/Sampling Instructions

NOTE 1. Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

Package ID 99-0002	Building 707
Survey Area: AA	Survey Unit N/A
Survey Unit Description . Interior of Buildingskids)	ng 708 and Building 708S (breathing air compressor on

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos.
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building: 707
Survey Area: AA	Survey Unit N/A
Survey Unit Description.: Interior of Building 70 skids)	8 and Building 708S (breathing air compressor on

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected.
- Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4- Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)



SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID:	99-0002	Building 708, 70	8S	
Survey Area	AA	Survey Unit N/A	\	
Change #	Description	<u></u>	Initiator/ Date	PRE
1	Added page 6A		12/21/99	M/S
2	Deleted at to diper	SAN & MONS	11/2/21/19	11/2 8 01
2	Replaced pg 6, deleted s	oct. B' mans	Mal da	All Sections
3	Replaced make who	overed or	On also	MBC
4	Replaced Page 9 with new maps survey doth on Pages 9 thro	s constitud	1 4 pe 00	<i>b</i>

(04)— Rev

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Building 708, 708S			
Survey Area: AA	Su	Survey Unit N/A		
Survey Type: Reconnaissance Level Characterization	n Surve	ey X Final Status Surve	у 🗆	
All Documentation Reviewed for Completion		RCT Supervisor	PRE	
Scan Surveys		1	do	
Total Activity Surveys		S	do	
Exposure Rate Surveys		NA	NA	
Removable Surveys		S	do	
Media Samples		all	Don	
Volumetric Samples		NA	NA	
All Surveys and Samples Accounted For		RCT Supervisor	PRE	
Scan Surveys		S	do	
Total Activity Surveys		J	do	
Exposure Rate Surveys		NA	NA	
Removable Surveys		J	do	
Media Samples		22	DOM	
Volumetric Samples		NA	NA	
Comments				
Program P. A. I.V.	Pres			
RESS Manager Printed Name Employee #	RESS	Manager Signature	Date	

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Page Euperceded 100M 4/28/00 chg #4

		Car Francisco	OLINONANIE	DANG BULL TIB	(C) EUN (QUL, Q).	ere sylub.		
INSTRUMENT DATA								
Mfg	Mfg			Survey Ty	pe:			
Model	Model		1	Building:				
Serial #	Serial #	Serial	#	Location*				
Cal Due	Cal Due	Cal D	ue					
Bkg.	Bkg	Bkg _						
Efficiency	Efficiency	Effici	ency	RWP#				
MDA	MDA	MDA		.}				
				Date		Time	 -	
Mfg	Mfg							
Model	Model	Mode	1	RCT		<u>/</u>		
Serial #	Serial #	Serial	#	. P	rınt name	Signat	ure	Emp #
Cal Due	Cal Due	Cal D	ue					
Bkg	Bkg	Bkg .				/		/
Efficiency			ency	r	rint name	Signat	ure	Emp #
MDA	MDA	MDA		<u> </u>				
מת ע.								
PRL#: Comments								
Comments			$\overline{}$					
			/					
			SURVEY	RESULTS				}
REMOVABLE	REMOVABLE	DIRECT	DIRECT	REMOVABLE	REMOVABLE	DIRECT	DIREC	т
Alpha DPM/100 cm ²	Beta DPM/100 cm ²	Alpha DPM/100 cm ²	Beta \ DPM/100 cm ²	Alpha DPM/100 cm ²	Beta DPM/100 cm ²	Alpha DPM/100 cm ²	Beta DPM/100	cm²
1				26.				···
i ^				\ 				
2				27				_
3				27 28				
3				27				
3 4 5				27 28 29 30 31				
3 4 5 6 7				27 28 29 30 31 32				
3 4 5 6 7 8				27 28 29 30 31 32 33				
3 4 5 6 7 8 9				27 28 29 30 31 32 33 34				
3 4 5 6 7 8 9				27 28 29 30 31 32 33 34 35				
3 4 5 6 7 8 9				27 28 29 30 31 32 33 34 35 36 37				
3 4 5 6 7 8 9 10 11 12 13				27 28 29 30 31 32 33 34 35 36 37 38				
3 4 5 6 7 8 9 10 11 12 13 14				27 28 29 30 31 32 33 34 35 36 37 38 39				
3 4 5 6 7 8 9 10 11 12 13 14 15				27 28 29 30 31 32 33 34 35 36 37 38 39 40				
3 4 5 6 7 8 9 10 11 12 13 14				27 28 29 30 31 32 33 34 35 36 37 38 39				
3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18				27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43				
3				27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44				
3				27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45				
3				27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44				
3				27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46				
3 4 5 6 6 7 7 8 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 2 23 24 2 24				27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49				
3 4 5 6 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 23				27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48				
3 4 5 6 6 7 7 8 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 2 23 24 2 24		S Supervision		27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49				

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RADIOLOGICAL SAFETY

BAUNT THE CHANGLO GY STOP

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE

SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA					
fg Eberline	Mfg Eberline	Mfg NeTech			
odel Sac-4	Model Sac-4	Model Electra			
Serial # 846	Serial # 1270	Serial #_ 3260_			
Cal Due 8 15 00	Cal Due 4 12-00	Cal Due 7-17 00			
Bkg <i>O</i> .	Bkg	Bkg			
Efficiency 33%	Efficiency 33%	Efficiency . 20			
MDA .5	MDA <u> </u>	MDA 94_			
Mfg <u>Eberline</u>	Mfg <u>Eberline</u>	Mfg <u>N</u> ら			
Model BC-4	Model BC-4	Model Electra			
Serial # 872	Serial # <u>833</u>	Serial #_2307			
Cal Due 4-12-00	Cal Due 7-14-00	Cal Due 7-12-00			
Bkg <u>43</u>	Bkg <u>40</u>	Bkg2-0			
Efficiency 25% Efficiency 25%		Efficiency 194			
MDA <u>101.3</u>	MDA 98.1	MDA 94			
T1 / 11 / 0 / 11 1					

Survey T	ype <u>Contamination</u>	<u>1</u>
	707, 708	
Location		Survey Area AA
Purpose _	Reconnaisance Level	Characterization
RWP#_	00-707-1204	
Date _3	-24, 3-30 00 Time	DAYS

Comments Floor / Walls < 2 meters Unbiased survey points 1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

SURVEY RESULTS									
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	Floor	0	12	12	16	Floor	0	28	24
2	Floor	Q	16	36	17	Floon	0	-48	0
3	Floor	0	-16	30	18	Floor	0	68	12
4	Floon	3	40	12	19	Floor	0	-20	36
5	Floor	6	4	D	20	Floor	3	24	30
6	Floor	0	28	12	21	Flour	0	-12	66
7	Floor	0	-20	36	22	Floor	0	-24	24
8	Floor	0	4	12	23	WALL 22m	0	- 8	24
9	Floor	0	-12	18	24	WALL & 2m	0	24	18
10	Floor	0	-24	18	25	WALL & 2m	3	-44	48
11	Flour	0	8	0	26	WALL L 2m	O	48	42
12	Floor	3	4	12	27	WALL L 2m	0	-28	36
13	Floor	0	24	24	28	WALL 22m	0	Э 0	36
14	Floor	0	12	12	29	WALL 22m	0	36	24
5	Floor	0	-32	12	30	WALL 2 2m	0	44	66

Date Reviewed 4-700 RS Supervision

Print Name Signature

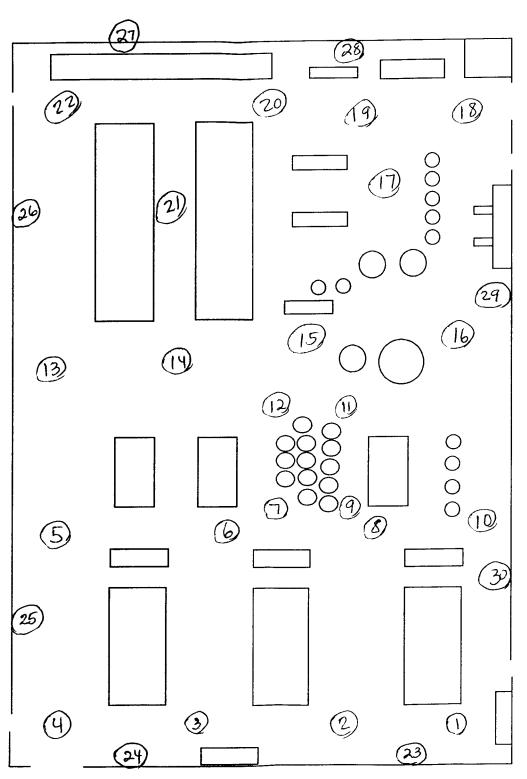
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

BUILDING 708





ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA									
fg Eberline	Mfg Eberline	Mfg NeTech							
odel Sac-4	Model Sac-4	Model Electra							
Serial #_ 846	Serial #_1270	Serial # 12-33							
Cal Due 8-15 00	Cal Due 4-12-00	Cal Due 5-11 00							
Bkg Oil cpm	Bkg 00 cpm	Bkg <u>0.0 cpm</u>							
Efficiency 33%	Efficiency_33%_	Efficiency 12063							
MDA 115 dpm	MDA & 2 dpm	MDA 94 dem							
•	•	•							
Mfg Eberline	Mfg Eberline	Mfg							
Model BC-4	Model BC-4	Model							
Serial # <u>872</u>	Serial #	Serial #							
Cal Due 412-00	Cal Due 7-14 00	Cal Due							
Bkg <u>41 cpm</u>	Bkg <u>38 cpm</u>	Bkg							
Efficiency 25%	Efficiency 25%	Efficiency							
MDA <u>992dpm</u>	MDA 95.9 dpm	MDA/							
Comments Floor / Walls < 2 meters Biased survey no									

Survey	Гуре	Contam	inatio	n
Building				
Location				Survey Area AA
Purpose	Reco	nnaisance	e Level	Characterization
RWP#	00	- 707- 12	-04	
Date _				Days
_			1	

Comments Floor / Walls < 2 meters Biased survey points

1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

SURVET RESULTS											
Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	ovable Beta	Total Alpha	Total Beta	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem	ovable Beta	Total Alpha	Total Beta
1	Floor	0	-20	6	1/A	16					
2	Floor	0	12	12	нlа	17					
3	Floor	0	-8	0	N/A	18					
4	Floor	D	76	6	NA	19			, ,		
5						20					
6						21		/			
7						22					
8			80/			23	4				
9		1				24	1,00				
10		7				25	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \				
11	*					26	*				
12						27	, /				
13						28	/				
14						29					
5		1									

Date Reviewed. 4-6-00 RS Supervision

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(Survey Area Pkg Page 9C of 9)

RS FORMS 07.02-01

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points** BUILDING 708

Rev 02/00

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA					
'fg Eberline	Mfg Eberline	Mfg NeTech			
odel Sac-4	Model Sac-4	Model Electra			
Serial # 846	Serial #	Serial #_1233			
Cal Due 8-15-00	Cal Due 4-12-00	Cal Due 5-11-0 0			
Bkg orcpm	Bkg Oocpm	Bkg oscam			
Efficiency 33%	Efficiency 33%	Efficiency 2023			
MDA //5 dpm	MDA 8.2 dpm	MDA 94dem			
Mfg Eberline	Mfg Eberline	Mfg \			
Model BC-4	Model BC-4	Model \			
Serial # <u>872</u>	Serial #_833_	Serial #			
Cal Due <u>4-12-60</u>	Cal Due 7-14-00	Cal Due			
Bkg <u>41 Cpm</u>	Bkg <u>38 cpm</u>	Bkg			
Efficiency 25%	Efficiency 25%	Efficiency \			
MDA 99,2 dem	MDA 95,9 dom	MDA			
Comments Ceilin	g / Walls > 2 meters	Biased survey			
1 minute pats an	d swipes See man	for locations			

Survey	Гуре _	CO	ntan	uma	101	[1
Building						
Location						Survey Area AA
Purpose	Reco	nnaı	sanc	e Lev	el (Characterization
RWP#	00	767	120	4		
Date 4	1-4-0	00		Tıme	· _	Days

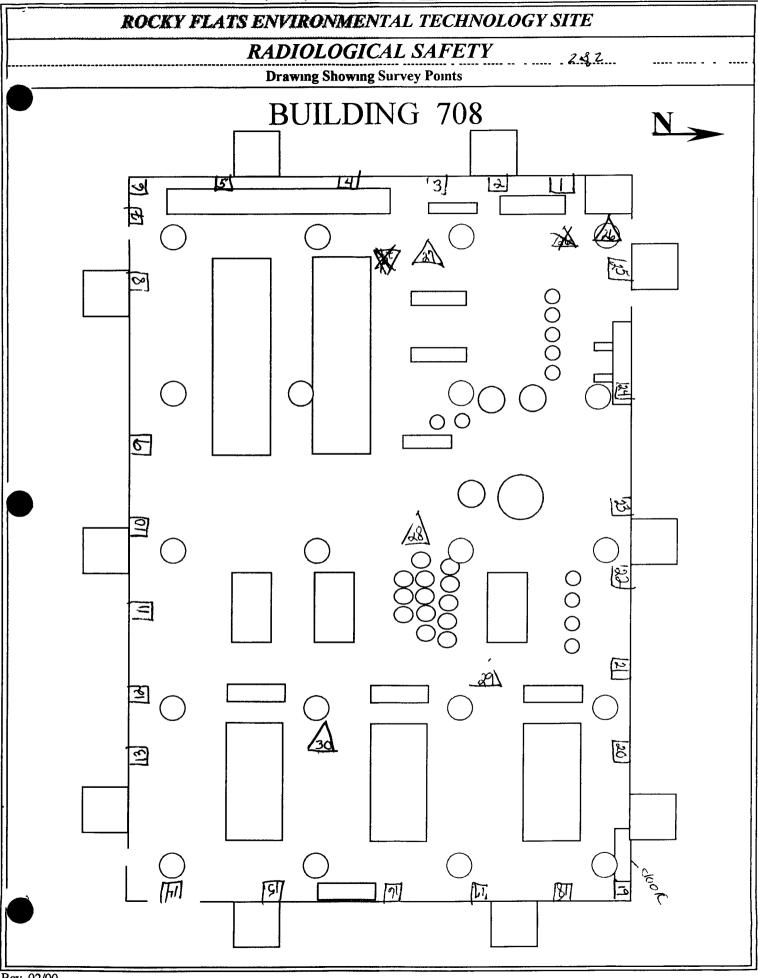
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SURVEY RESULTS

1									
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	5) 4400 WALLS	0	4	18	16	WALLS > 2M	ပ	.33	24
2	,	0	0	30	17	,	0	20	34
3		O	-16	18	18		0	-6A	0
4		0	44	30	19		0	52	12
5		Э	-12	36	20		O	4	24
6		Ó	-16	12	21		0	44	36
7		0	12	6	22		3	4	42
8		0	16	42	23		0	24	16
9		3	36	18	24		3	24	12
10		J	So.	6	25	V	0	-40	18
11		0	12	24	26	Ceilina	0	<i>a</i> 0	12
12		0	- 4	18	27	7	0	-20	18
13		O	-16	12	28	71	3	٥	24
14		0	26	30	29	71	B	90	30
5		0	34	24	20	11	^	- 19	12

Date Reviewed 4600 RS Supervision.

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	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE								
	INSTRUMENT DAT	ГΑ			,	C4	_		
_	Eberline Mfg Eberline		g <u>NeT</u>			vey Type Contamination	<u>n</u>		
	el Sac-4 Model Sac-4	_	Model Electra			ling 708	C	~ . ov . A =	ος ΛΛ
	ul # <u>846</u> Serial # <u>1270</u> Due <i>§ 15-0</i> 0 Cal Due <i>4-12 o</i> 0	-	Serial # 1518 Cal Due 6 24.00		Location Survey Area A Purpose Reconnaisance Level Characterization				
	0.0 cpn Bkg 00 cpm		g/0						
_	elency 33% Efficiency 33%		iciency		RW	P# 00-707-170	7		
	A 8.2dpm MDA 8.2dpm	-	DA <u>99</u>	7	Date	E 43 00 Time F	says	,	
Mfg			g <i>NB</i>						
	lel <u>BC-4</u> Model <u>BC-4</u>	_	del EL		R				
•	al # <u>\$72</u> Serial # <u>\$33</u> Due <u>47200</u> Cal Due <u>7-14</u> 07	-	ial # <u>2</u>] Due 7						
	37 cpm Bkg 39 cpm		g <u>200</u>						
	ciency 25% Efficiency 25%		iciency_		R				
MD.		MI)A 94	dpm					
•	ments <u>Equipment Biased su</u>								
1	minute pats and swipes See i	nap for	locatio	ns					
	pts Brased B70	<u> </u>	not f	sugo	med	· la supment ha	b ble	1)	
	removed from Si	.	SUI	RVEY	RESU	LTS			
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	PUMP P-74B	0	20	12	16	TANK 40650	0	32	6
2	TANK 455-756	0	24	0	17	MOTOR 330-236	0	40	12
3	Compressur 39411-820	0	20	18	18	MUTOR 330-237	0	-20	12
4	Glectrical Paner	0	24	0	19	TANK # 0667	0	36	18
5	Electrical Box	0	36	18	20	TANK # 0665	12	0	36
6	TANK # 0637	3	-36	96	21	TANK #0663	0	48	18
7	Generator Penel	0	44	6	22	TABLE	3	-12	12
8	TANK # 0638	0	-12	36	23	SUPPLY VALVE	6	64	6
9	Benerator	0	20	18	24	TANK	0	36	18
10	PA-AC-3 #321307	0	32	18	25	TANK	0	40	18
11	AIR Flow	0	24	6	26	VALVE 708-PA V-4	9	-20	12
12	AIR Compressor 321261	0	-28	0	27	TANK FUEL filter	0	24	18
13	TANK # 0656	6	4	12	28	Support	0	0	12
14	TANK #0642 TANK #0635	.3	48	18	29	Sanitary drain	0	16	42
5	7ANK #0635	3	32						
Date	Reviewed 4.6.00 RS St	ipervisi	ion _			.c Dignaturo		Line #	

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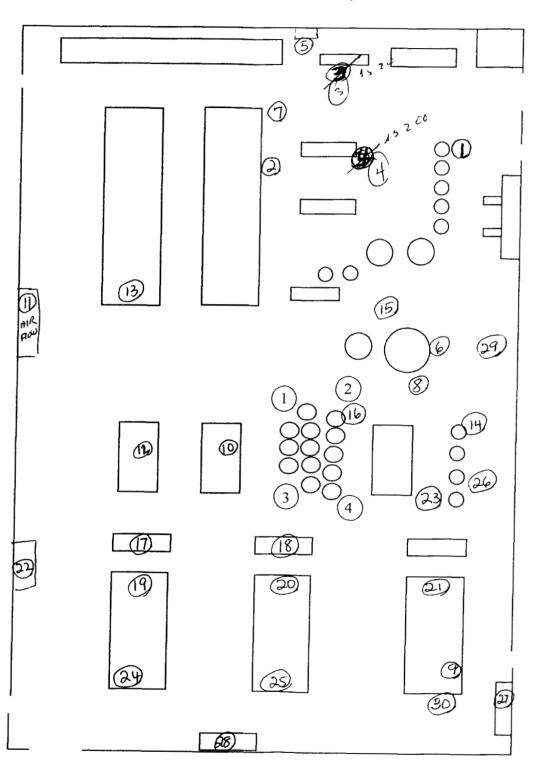
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

BUILDING 708 (EQUIPMENT)





Rev 02/00

SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002		Building 708 (EXTERIOR/ROOF) Survey Unit N/A				
Survey Area: BB						
Initiator/ Date Release Date		Validation Date	Closure Date			
A 10/25/99	97 12/21/99	EOM 6/14/00	100M 6/14/00			
00	<i>i</i> (

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	002	Building 708 (E					
Survey Area BB		Survey Unit N/A	`	Area (m ²) per building			
Survey Unit Desc	ription External	surfaces/roof of b	ııldıng 708				
Survey Type			Classification	* *			
RLC Survey X	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
30	24	0	1	0	54		
Building		Туре.		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Desc	ription						
Survey Type		=======================================	Classification				
RLC Survey □	FSS □		Class 1 □ Class	Y	Jnknown 🗆		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building Type							
Building		Туре		Survey Area			
Building Survey Unit		Туре	Area (m²)	Survey Area			
	cription	Туре	Area (m²)	Survey Area			
Survey Unit	cription	Туре	Area (m²) Classification	Survey Area			
Survey Unit Description Survey Type RLC Survey	FSS 🗆	Туре			Jnknown □		
Survey Unit Description Survey Type		Type Equipment Surface Activity Measurements	Classification		Jnknown □ Surface Activity Scans		
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface Activity	Classification Class 1 Class	2 □ Class 3 □ U Volumetric	Surface Activity		
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface Activity	Classification Class 1 Class	2 □ Class 3 □ U Volumetric	Surface Activity		
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements	FSS Biased Surface Activity	Equipment Surface Activity Measurements	Classification Class 1 Class	2 □ Class 3 □ U Volumetric Samples	Surface Activity		
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 □ Class Media Samples	2 □ Class 3 □ U Volumetric Samples	Surface Activity		
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 □ Class Media Samples	2 □ Class 3 □ U Volumetric Samples	Surface Activity		
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description Survey Type RLC Survey RLC Survey	FSS Biased Surface Activity Measurements cription	Equipment Surface Activity Measurements Type	Classification Class 1 Class Media Samples Area (m²) Classification Class 1 Class	2 Class 3 UVolumetric Samples Survey Area	Surface Activity Scans Jnknown		
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description Survey Unit Description	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples Area (m²)	2 Class 3 U Volumetric Samples Survey Area	Surface Activity Scans		



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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 708 (EXTERIOR/ROOF)			
Survey Area: BB	Survey Unit: N/A			
Survey Unit Description: EXTERNAL SURFACES/ROOF OF BUILDING 708				
Building Information:				
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey			
Building Type Type 1 X Type 2 Type 3				
Classification Class 1 🗆 Class 2 🗆 Class 3 🗇 Un	known X			
Contaminants of Concern Plutonium X Uranium X	Other 🗆			
Justification for Classification: N/A				
Special Support Requirements: Ladder, manli instrumentation may be required for access into	· · · · · · · · · · · · · · · · · · ·			
Special Safety Precautions: Access to roofs, s buildings may require additional approvals from commencing surveys				
Isolation Controls:				
Level 1 Level 2 N/A X				
Labeling Requirements: NONE				
Survey Package Implementation: N/A				
	<u> </u>			
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	0			

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Package ID: 99-0002	Building, 708 (EXTERIOR/ROOF)
Survey Area. BB	Survey Unit N/A
Survey Unit Description: External surfaces/roof	of building 708

	Mınımum Survey/Sampling Measure	ment Requirements
Measurement	Number and Type	Comments
irface Activity	ROOF/EXTERIOR WALLS < 2 meters	SEE NOTE 1
leasurements	30 unbiased survey points uniformly distributed	SEE NOTE 2
	over roof/exterior, as follows - 3 survey points per each exterior wall	SEE NOTE 3
	around building (12 points total)	SEE NOTE 4
	- 18 survey points on roof/lip	
	24 biased survey points 2 survey points each of 2 different roof drains/downspouts on /near ground level	
	 (4 points total) 20 survey points distributed among the following locations roof exhaust vents/duct work and capped roof openings 	

Package ID: 99-0002		Building. 708				
Survey Area: BB		Survey Unit N/A				
Survey Unit Descr	ription: External surfaces/roof of b	uıldıng´	708			
	Mınımum Survey/Sampling M	easuren	nent Requirements			
Measurement	Number and Type		Comments			
Surface Scanning	ROOF/EXTERIOR WALLS < 2 meters of the surface scans shall be taken at ear location identified for surface activity measurements. Locations found to be ab DCGL will be noted	ich	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4			
Media Samples	Total of 1 biased roof material samples taken as follows - One sample taken on North half of roof		SEE NOTE 5			
Volumetric Samples	NONE					
Isotopic Gamma Scans	NONE					

Package ID: 99-0002	Building 708	
Survey Area: BB	Survey Unit N/A	
Survey Unit Description: External surfaces/r	oof of building 708	

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media."

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling
 If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting
 the media sample
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3 PRO-165-RSP-07 02, Contamination Monitoring Requirements

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Package ID: 99-0002	Building 708
Survey Area· BB	Survey Unit N/A
Survey Unit Description. External surfaces/roof or	f building 708

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2. The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements



Package ID:\99-0002	Building 707			
Survey Area: BB	Survey Unit N/A			
Surgery Unit Desemption . External surfaces/roof of building 708				

Survey Unit Description: External surfaces/roof of building 708

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer of the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building 707
Survey Area: BB	Survey Unit N/A

Survey Unit Description: : External surfaces/roof of building 708

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected.
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos.
- 4- Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc)

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SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 9	99-0002	Building 708 (EX	TERIOR/ROOF	5)		
Survey Area:	BB	Survey Unit N/A				
Change #	Description		Initiator/ Date	PRE		
1	Added page 6A		0 12/21/99	KIJE		
_ 2	Delche I REA to diver,	TRAN B MEAS	1012/19	ME Da		
2	Replaced AL 6 to delete	spechics mors	1/ (h a/ 2/00	MISE		
.3	Replaced or 60 w/no	great or	Mar al som	1135		
4	Replaced The 9 both new maps & Co ditor on Alges 9 Hrough 9 E	mipletoff survey	Jan 4/28/00	do		

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Building 708 (EXTERIO	R/ROOF)		
Survey Area: BB	rvey Area: BB Survey Unit N/A			
Survey Type: Reconnaissance Level Characterizati	ion Survey X Final Status Surve	еу 🗆		
All Documentation Reviewed for Completion	RCT Supervisor	PRE		
Scan Surveys	J	d-		
Total Activity Surveys	1	d		
Exposure Rate Surveys	NA	NA		
Removable Surveys	ß	d		
Media Samples	321	BOM		
Volumetric Samples	NA	NA		
All Surveys and Samples Accounted For	RCT Supervisor	PRE		
Scan Surveys	1	do		
Total Activity Surveys	1	do		
Exposure Rate Surveys	NA	NA		
Removable Surveys	人	Earl		
Media Samples	& NA OUS	A-NA		
Volumetric Samples	NA	NA		
Comments				
	The second secon			
•				
RESS Wanager Frances Name Lampioyee #	INDO Manager Signature	Date		

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Mfg			PAN ANDA	Negasi, ve	(CFINDILOX	il Suub	
i \	NSTRUMENT	DATA					and an analysis of the second
	Mfg			Survey Tv	ne:		
Model	Model	Mode	11	Building			
Serial #	Serial #	Serial	#	Location*	· • · · · · · · · · · · · · · · · · · ·		
Cal Due	Cal Due	Cal D)ue	Purpose:			
Bkg.	Bkg.						
Efficiency	Efficiency			RWP#			
MDA	MDA	MDA		1207			·
	\		•	Date		Time	
Mfg	Mfg	Mfg.					
Model	Model	Mode	el	RCT	ı	<u> </u>	1
Serial #	Serial #	Seria	#	P	rint name	Signatu	re Emp#
Cal Due	Cal Due	Cal D	oue				
Bkg				RCT		1	1
Efficiency			iency		rint name	Signatu	re Emp#
MDA		MDA	\			Ŭ	
Comments.							
REMOVABLE		DIRECT	SURVEY F	REMOVABLE	REMOVABLE	DIRECT	DIRECT
Alpha DPM/100 cm ²	Beta DPM/100 cm ²	Alpha DPM/100 cm ²	Beta DPM/100 cm ²	Alpha DPM/100 cm ²	Beta DPM/100 cm ²	Alpha DPM/100 cm²	Beta DPM/100 cm ²
2				27			
3				28			
4				29			
5				30			
6		***************************************		31	\		
8	•			33	/		
9.				34		-	
10				35			
11				36			
12				37			
13 14			-	38	-	\	
15			-	40		/	
				41			
16				42			
17.				43			
17 18							
17 18 19			***	44			
17. 18 19 20				45			
17. 18 19 20 21	-			45 46			-
17. 18 19 20 21 22				45			
17. 18 19 20 21 22 23 24				45 46 47 48 49			
17. 18 19 20 21 22 23				45 46 47 48			

MEN JUECENIOLOGIES CHE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE.

SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, Contamination Monitoring Requirements

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

	<u> </u>				
IN	STRUMENT DATA	\	_		
'fg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Co	ntaminatio	n
fodel Sac-4	Model Sac-4	Model Electra	Building 708		
Serial # 846	Serial # 1054	Serial #3260	Location Exterior		Survey Area <i>BB</i>
Cal Due 8-15-00	Cal Due 8 -23-00	Cal Due 7-17-00	Purpose Reconnai	sance Level	Characterization
Bkg oo cam	Bkg o 4 cem	Bkg 5 com			
Efficiency 33%	Efficiency 33%	Efficiency 17 %	RWP # 00 - 70	51-1204	
MDA 82 0Pm	MDA 14 8 0Pm	MDA 94dpm	Date <u>4-20-00</u>	Time _	1630
Mfg Eberline	Mfg Eberline	Mfg Ne Tech			
Model BC-4	Model BC-4	Model Electra			
Serial # <u>959</u>	Serial # 833	Serial # 2307			
Cal Due 7-19-00	Cal Due 7-14-00	Cal Due 7-12-00			
Bkg <u>38 com</u>	Bkg 46.0 com	Bkg <u>2.0 com</u>			
Efficiency 25%	Efficiency 25%	Efficiency 17%			
MDA 959 dom	MDA 104.5 don	MDA 94 dom			
Comments Roof	/ Exterior Walls < 2	2 meters Unbiased	survey points		And the second s
1 m ² scans, 1 m	inute pats and swip	es See map for lo	cations		
	e High Voltage		ot get		

SURVEY RESULTS

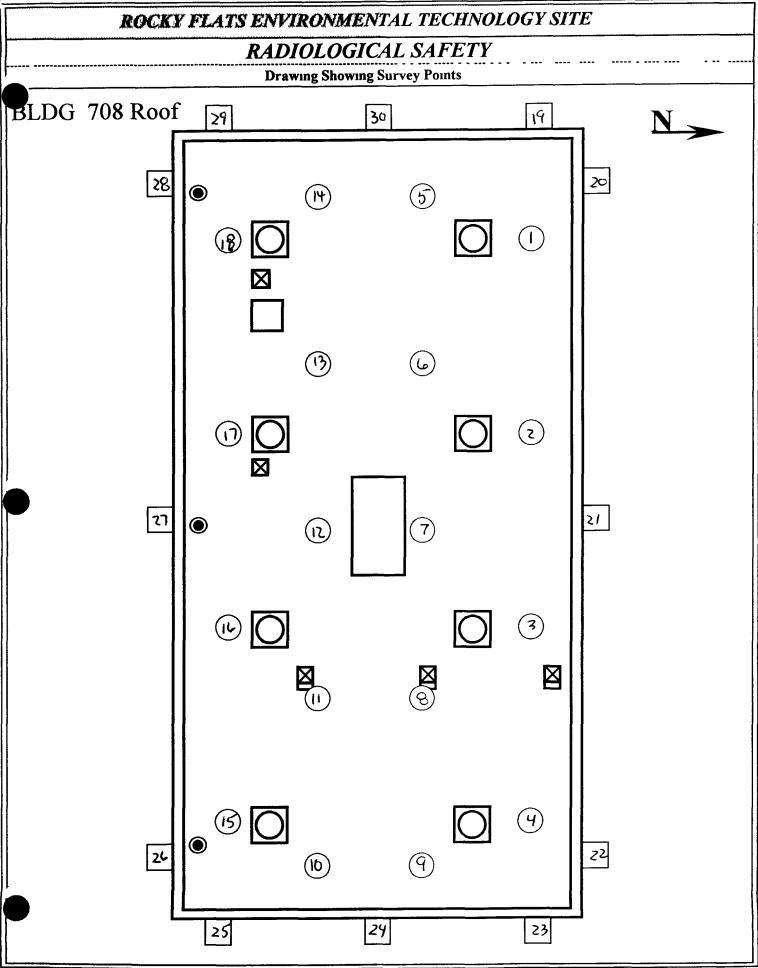
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	Roof	0	16	60	16	Roof	0	0	54
2	Roof	Ò	-16	72	17	Rocf	0	16	42
3	R∞F	0	Zo	66	18	Roof	3	24	54
4	Roof	9	4	54	19	Wall	0	-40	42
5	Roof	3	16	48	20	Wall	3	-36	84
6	Roof	0	-24	78	21	Wall	0	32	54
7	Roof	0	4	42	22	Wall	3	-36	24
8	Roof	3	-36	60	23	Wall	0	-40	24
9	Roof	0	-12	60	24	Wall	0	-36	30
10	Roof	0	16	72	25	Wall	3	-40	30
11	Roof	0	0	108	26	Wall	0	-72	66
12	Roof	3	-56	78	27	hall	0	4	36
13	Roof	0	- 40	54	28	ubll	0	-52	/8
14	Roof	0	-20	48	29	U11	0	4	78
5	Roof	0	-16_	48	30	see note			

Date Reviewed. 426 00 RS Supervision

Print Name

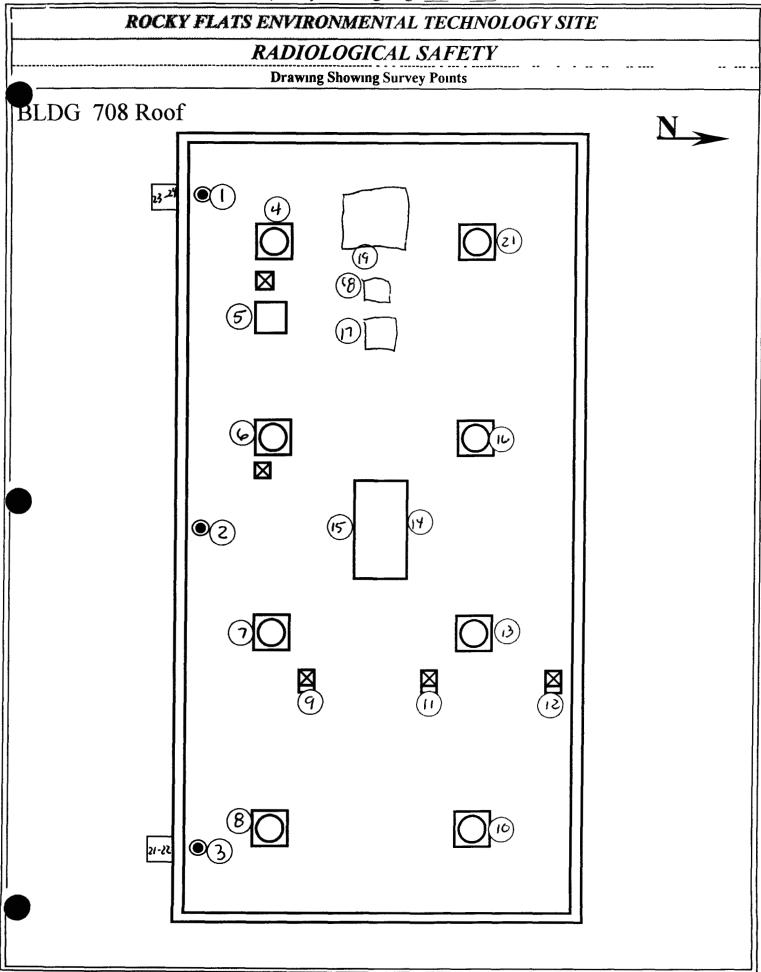
Signature

Emp #



Rev 02/00

	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE									
INSTRUMENT DATA										
fg	Eberline	Mfg Eberline	Mf	g NeT	ech		vey Type Contamination	n		
	el_Sac-4	Model Sac-4	-	del_Elec			ling 708			
Seria	1# <u>876</u>	Serial # 1054				Locat	tion Exernal Surfaces	Surv	ey Are	a <i>BB</i>
88		Cal Due 8-23-00		Due <u>7-</u>		Purpo	ose Reconnaisance Level	Charac	terizat	ion
FE	UU GAM	Bkg of com	_ Bk	<u>ء ک</u> ے	pm	DXX	P# 00-707-1204			
		Efficiency 33%	Eff	iciency_	17%)				
MDA	8 å cpm	MDA 14.8 dpm)A <u>99</u>	•	Date	1 4-20-00 Time	/630	***	
,,	Eberline	Mfg Eberline		g _ <i>N</i> c_						
н	lel <u>BC-4</u>	Model BC-4		del <u>e /e</u>						
66	al # <u>959</u> Due 7-15 00	Serial # <u>833</u> Cal Due <u>7-14-00</u>								
	38 cpn	Bkg 46 CPM								
	ciency 25%	Efficiency 25%								
66		MDA 1045 DP	=							
		/ Exterior Walls				S				
_11	m ² scans, 1 m	nute pats and swi	ipes	See ma	p for le	ocation	18			
II ——										
				SII	RVEY	RESID	ITS			
 -			T ,			1		Т		
Swipe #	Location\Desci (Results in DPM/		Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha	ovable Beta	Total Alpha
<u>'</u>	(Results III DI IV)	1000m)		-4		 	(Results in DI W Tooem)	1 -	 	
			0		72	16		0	-12	54
2			6	-58	30	17		6	20	168
3			٥	-20	30	18_	****	0	48	24
4			3	0	60	19	- 4000	0	4	180
5			3	-48	24	20		0	-24	48
6			3	-8	24	21_		U	8	102
7			O	-40	48	22		0	-24	60
8			15	-32	48	23		0	-8	108
9			0	8	48	24		0	-4	54
10			0	2.0	48	25	END OF SURVEY			
11			0	-12	48	26				
12			1	-44	237	r27	11/2	1		
13			و	8	72	28	A			
14			0	24	30	29				
5			3	<u>-8</u>	222	30				
Date	Date Reviewed 4 26 00 RS Supervision Print Name Signature Emp #									



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SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002		Building 731 Survey Unit· N/A				
Survey Area: CC						
Initiator/ Date	Release Date	Validation Date	Closure Date			
10/25/49	9/12/21/99	FBM 6/14/00	Early 6/14/00			
W	00					
·····						

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	002	Building 731		Type 2			
Survey Area CC Survey Unit N/A			Area (m ²) ~47				
Survey Unit Description INSIDE OF BUILDING 731							
Survey Type			Classification				
RLC Survey X	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
30	22	30	1	0	42		
Building		Туре		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Desc	ription						
Survey Type			Classification				
RLC Survey □	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown 🗆		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре		Survey Area			
Building Survey Unit		Туре	Area (m²)	Survey Area			
	cription	Туре	Area (m²)	Survey Area			
Survey Unit	cription	Туре	Area (m ²) Classification	Survey Area			
Survey Unit Desc	FSS 🗆	Туре			Jnknown □		
Survey Unit Description Survey Type		Type Equipment Surface Activity Measurements	Classification		Jnknown □ Surface Activity Scans		
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface Activity	Classification Class 1	2 □ Class 3 □ U	Surface Activity		
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface Activity	Classification Class 1	2 □ Class 3 □ U	Surface Activity		
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements	FSS Biased Surface Activity	Equipment Surface Activity Measurements	Classification Class 1	2 □ Class 3 □ U Volumetric Samples	Surface Activity		
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples	2 □ Class 3 □ U Volumetric Samples	Surface Activity		
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples	2 □ Class 3 □ U Volumetric Samples	Surface Activity		
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples Area (m²) Classification Class 1 Class	2 Class 3 L Volumetric Samples	Surface Activity		
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description Survey Type	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples Area (m²)	2 Class 3 L Volumetric Samples	Surface Activity Scans		

Page superceded 120M 4/20/00 Change #4

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	ge ID 99-0002 Building 731			Type 2				
Survey Area CC Survey Unit N/A				Area (m ²) ~47				
Survey Unit Description INSIDE OF BUILDING 731								
Survey Type			Classification					
RLC Survey X	rss □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown X			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans			
30	42	30	1	0	42			
Building		Туре		Survey Area				
Survey Unit			Area (m²)					
Survey Unit Desc	ription							
Survey Type			Classification					
RLC Survey □	FSS 🗆		Class 1 Class	2 □ Class 3 □ U	Jnknown □			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans			
Building		Туре		Survey Area				
Survey Unit			Area (m²)					
Survey Unit Desc	ription							
Survey Type			Classification					
RLC Survey □	FSS □		Class 1 □ Class	2□ Class 3□ U	Jnknown □			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans			
Building		Туре		Survey Area				
Survey Unit.			Area (m²)					
Survey Unit Description								
Survey Type			Classification					
RLC Survey □	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown□			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans			

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 731
Survey Area: CC	Survey Unit: N/A
Survey Unit Description: Inside of building 73	1
Building Information:	
Survey Type Reconnaissance Level Characterization St	urvey X Final Status Survey
Building Type Type 1 □ Type 2 X Type 3 □	
Classification Class 1 □ Class 2 □ Class 3 □ Un	known X
Contaminants of Concern Plutonium X Uranium X	Other
Justification for Classification: N/A	
Special Support Requirements: Ladder and/or	remote reach tools and instrumentation may be
required for access to walls/ceilings Additional	lighting necessary inside of Building 731
Special Safety Precautions: Access to overhea	d areas may require additional controls
Review RWP requirements and surveys prior to	entry
Isolation Controls:	
Level 1 Level 2 N/A X	
Labeling Requirements: NONE	
Survey Package Implementation: N/A	

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Package ID: 99-0	002 E	guilding. 731
Survey Area: CC	S	urvey Unit N/A
Survey Unit Desc	ription: INSIDE OF BUILDING	731
	Minimum Survey/Sampling M	easurement Requirements
Measurement	Number and Type	Comments
Surface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1
Measurements	30 unbiased survey points uniformly distributed and affective and affect	
	throughout inside of building (15 on wall floors)	SEE NOTE 3
	12 biased survey points at the following locations	SEE NOTE 4
	- 2 points beneath <u>each</u> of tanks 651, 6 101 (6 points total)	552, and
	- 6 points beneath piping/pumps/valve	es
	CEILINGS/WALLS > 2 meters	
	10 biased surveys (divided evenly between and ceiling where possible) with focus or following areas	
	- Walls behind process/liquid lines	
	- Stained or discolored areas	
	- Areas around pipe or other penetrati	ons
	EQUIPMENT	
	30 biased survey points on equipment wi	h focus
	- Tanks	
	- Piping/pumps associated with tanks	
	- Ventilation exhaust ducts	
	- On top of overhead piping (where learn accessible through reach tools/la	

Page Superceded 2014 4/28/00 Change #5 PAG SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Survey Area: CC Survey Unit Description: INSIDE OF BUILDING 73 Minimum Survey/Sampling Measurement Number and Type Surface Activity Measurements FLOORS/WALLS < 2 meters 30 unbiased survey points uniformly distributhroughout inside of building (15 on walls, 1 floors)	
Minimum Survey/Sampling Measurement Number and Type Surface Activity Measurements FLOORS/WALLS < 2 meters 30 unbiased survey points uniformly distributhroughout inside of building (15 on walls, 1	urement Requirements
Measurement Number and Type Surface Activity Measurements FLOORS/WALLS < 2 meters 30 unbiased survey points uniformly distribut throughout inside of building (15 on walls, 1	
Surface Activity Measurements FLOORS/WALLS < 2 meters 30 unbiased survey points uniformly distributhroughout inside of building (15 on walls, 1	Comments
Measurements 30 <u>unbiased</u> survey points uniformly distribution throughout inside of building (15 on walls, 1	
12 biased survey points at the following locations - 2 points beneath each of tanks 651, 652 101 (6 points total) - 6 points beneath piping/pumps/valves CEILINGS/WALLS > 2 meters 30 biased surveys (divided evenly between and ceiling where possible) with focus on following areas - Walls behind process/liquid lines - Stained or discolored areas - Areas around pipe or other penetrations EQUIPMENT 30 biased survey points on equipment with foon - Tanks - Piping/pumps associated with tanks - Ventilation exhaust ducts - On top of overhead piping (where locat are accessible through reach tools/ladde	SEE NOTE 3 SEE NOTE 4 and cus ons

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Package ID: 99-0002	Building 707
Survey Area · CC	Survey Unit N/A

Survey Unit Description: INSIDE OF BUILDING 731

	Mınımum Survey/Sampling Measure	ment Requirements
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters	SEE NOTE 1
	42 1 m² surface scans shall be taken at each location identified for surface activity measurements Locations above the DCGL are to be documented CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 1 biased (paint) media samples taken as follows - 1 sample on floor in lower level of building**	**Media sample may not be possible at this location due to floor coating configuration Skip sample if sampling not feasible
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (gont)

Package ID: 99-0002	Building 707
Survey Area: CC	Survey Unit N/A
	Y 0 = 0.1

Survey Unit Description: INSIDE OF BUILDING 731

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample.
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures.
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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678

lding 707
vey Unit N/A
_

Survey Unit Description: INSIDE OF BUILDING 731

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 707
Survey Area · Co	Survey Unit N/A
Survey Unit Description: : INSIDE OF BUILDI	NG 731
\ Survey/Sampli	ng Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer on the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos.
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building 707
Survey Area: CC	Survey Unit· N/A
Survey Unit Description: : INSIDE OF BUILDI	NG 731

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)



SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID:	99-0002	Building 73	31	
Survey Area	: CC	Survey Unit	t N/A	
Change #	De	scription	Initiator/	PRE
	1 1 1		Date	Will .
	Added page	6A	J/2/2/49	NIC On O
	Deleted Del	o draw scar s	men 4 / 12/2/99	A STORY
	Replaced pg 6 1		- mats/ /2 0/18/00	
3	Roflaced pg 6	A w/ revised pg	9/13/00	MIZ
4	Kepland page 2	N revised page	4/28/00	
5	Replaced page 4 w	remain page	EDBM /4/20/00	
6	Replaced pine 9 N	pages 9-99	KDM /5/9/00	
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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Building 731	
Survey Area: CC	Survey Unit N/A	
Survey Type: Reconnaissance Level Characterizat	ion Survey X Final Status Sur	vey □
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys	1111	Em
Total Activity Surveys		Dong
Exposure Rate Surveys	NA	NA
Removable Surveys		Eory
Media Samples	24	porus
Volumetric Samples	NA	MA
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys		DOM
Total Activity Surveys		Ray
Exposure Rate Surveys	NA	NA
Removable Surveys		EM
Media Samples	1/20	Bom
Volumetric Samples	NA	NA
Comments		

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Page Superceded tom 5/9/00 Change #6

T	STRUMENT	`DATA					
1	Mfg			Survey Ty	vne:		
	Model			Building			
erial #	Serial #	Serial (#				
al Due	Cal Due	Cal Du	ıe	Purpose _			
kg	Bkg.						
fficiency	Efficiency	Efficie	ncy	RWP#_			
IDA	MDA	MDA					
				Date		Time	
lfg	Mfg			.]			
lodel	Model		·	-			
erial #	Serial #	Serial i	#		Print name	Signature	Emp
al Due	Cal Due	Cal Du	ıe				,
kg	Bkg.	BKg _		RCT	D4	/	/
fficiency	Efficiency	YEITICIE	ency		Print name	Signature	Emp
DA	MDA	MDA_		.1			
nt #.		`					
RL#:							
omments			$\overline{}$				
			$\overline{}$				
							
			SURVEY È	RESULTS			
REMOVABLE Alpha DPM/100 cm²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ² D	DIRECT Beta PPM/100 cm ²
Alpha	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm ² 26	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm ² 26	Beta DPM/100 cm²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29	Beta DPM/100 cm²	Alpha	Beta
Alpha DPM/100 cm ² 1 2 3 4	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31	Beta DPM/100 cm²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32	Beta DPM/100 cm²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33	Beta DPM/100 cm²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34	Beta DPM/100 cm²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35	Beta DPM/100 cm²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34	Beta DPM/100 cm²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38	Beta DPM/100 cm²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39	Beta DPM/100 cm²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	Beta DPM/100 cm²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41	Beta DPM/100 cm²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	Beta DPM/100 cm²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42	Beta DPM/100 cm²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43	Beta DPM/100 cm²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46	Beta DPM/100 cm²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	Beta DPM/100 cm²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	Beta DPM/100 cm²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	Beta DPM/100 cm²	Alpha	Beta

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE.

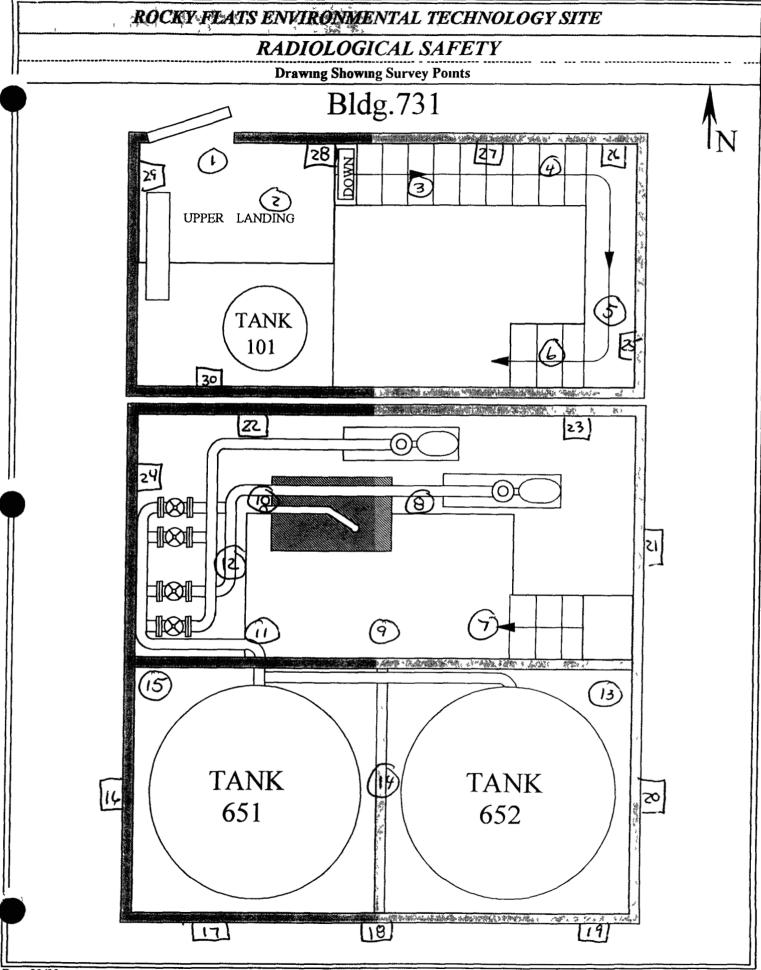
SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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(Survey Area Pkg Page 94 of 9) **RS FORMS 07.02-01 ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE INSTRUMENT DATA** Contamination Mfg Eberline **Survey Type** (fg Eberline Mfg NeTech 731 odel Sac-4 Model Sac-4 Model Electra Building Serial # 846 Pi+ Survey Area CC Serial # (270 Location Serial # 2307 Reconnaisance Level Characterization Cal Due 8-15-00 Purpose Cal Due 4-12-00 Cal Due 7-12-60 Bkg Ozcem Bkg O 1 cm Bkg 20 cpm RWP# Efficiency 33% Efficiency 33% Efficiency 19.40% MDA 115 DPm MDA 94 02m MDA 129 0PM 1500 Date 4-12-06 Time Mfg Eberline Mfg Eberline Mfg Model Model BC-4 Model BC-4 Serial #833 Serial # 872 Serial # Cal Due 7-14-00 Cal Due 4-12-60 Cal Due Bkg 42 cem Bkg Bkg 42 cpm RCT Efficiency 25% Efficiency_25%_ Efficiency Print name Signature / Emp # MDA 100.3 DPm MDA 1003 DPm MØA Comments Floor / Walls < 2 meters Unbiased survey points 1 m² scans, 1 minute pats and swipes See map for locations wiped down and contained 28 -**SURVEY RESULTS** Removable Total Swipe Removable Total Location\Description Swipe Location\Description

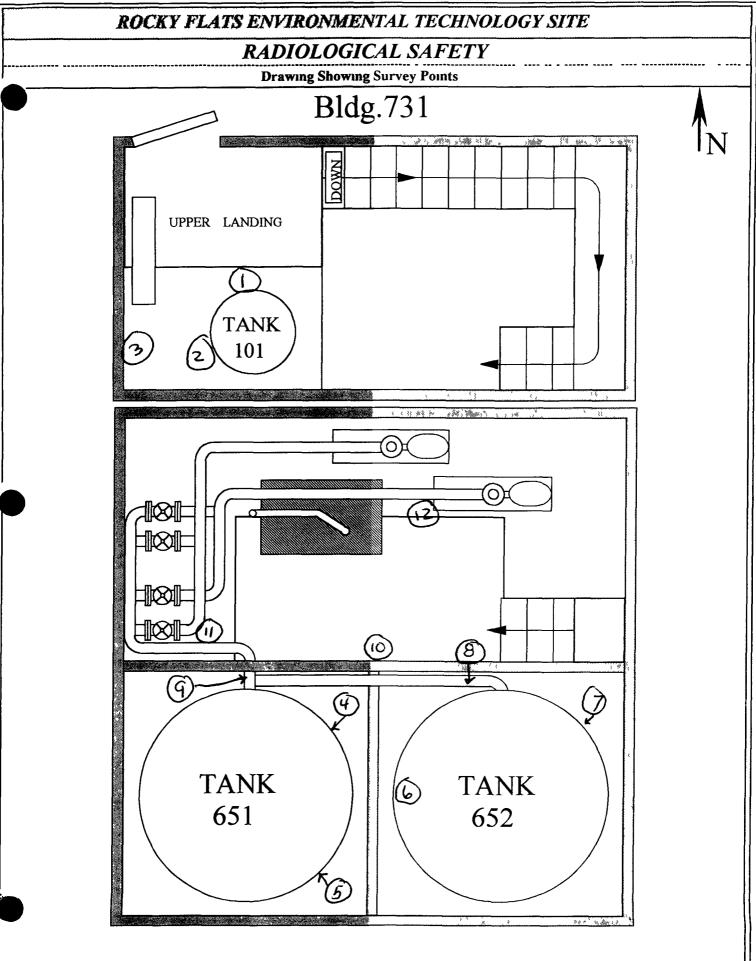
#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
1	F	0	-12	12	16	W	0	40	30
2	F	3	3Z	40	17	W	٥	-8	30
3	F	0	20	60	18	W	3	-36	24
4	F	0	32	84	19	W	0	-58	30
5	F	9	٥	30	20	W	0	44	36
6	F	9	-36	48	21	ω	0	24	48
7	F	0	-8	48	22	ω	216	12	3000
8	F	0	24	162	23	W	3	-40	60
9	F	0	24	24	24	W	C	48	36
10	F	0	12	60	25	W	0	40	30
11	F	0	0	48	26	W	0	24	24
12	F	27	0	1620	27	W	O	-8	48
13	F	0	32	54	28	W	204	48	30600
14	F	0	24	54	29	W	0	20	30
5	F	0	24	240	30	W	3	36	30

Date Reviewed. <u>5-8-00</u> RS Supervision



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		ROCKY FLA	TS E	NVIR	ONM	ENT	AL TECH	INOLO	<i>FY SITE</i>	<u> </u>		
	IN:	STRUMENT DAT				-1		Conton				
¹fg	Eberline	Mfg Eberline	-	y NeT			ey Type	Contan	nination	l		
	clSac-4	Model Sac-4		del Elec		Build				Curr	ey Area	00
18	1# 846	Serial # 1270		ral # 2		Local		nnaisanc	e Level (
		Cal Due 4-12-00				ruip	JSC INCC		<u>e Bever c</u>			
	0.2 cpm ency 33%	Bkg <u>0.1 cpm</u> Efficiency 33%		iciency	<u> </u>	RW	P#		···· ·			
	12.9 DPm	MDA 115 DP)A <u></u>				_				
						Date	2 4-1	2-00	Time	160	20	
Mfg		Mfg Eberline	_									
	el <u>BC-4</u>	Model BC-4			/							
	1# <u>833</u>	Serial # 872 Cal Due 4-12-09		ial # Due //	14							
	42 CPm	Bkg 42 cpm		7								
	iency 25%	Efficiency 25%		iolency		RC1	Print na	ame /	Signatu	re	/ Emp	<u> </u>
		MDA 1003 D?m		,			1 111111 116	, iii	Signatu		, Diii	<i>,</i> ,,
		/ Walls < 2 meter		sed su	rvey po	ints						
1 n	n ² scans, 1 mi	nute pats and swi	pes	See ma	p for le	ocation	ıs					
				SU	RVEY	<u>RESU</u>	LTS					
Swipe	Location\Descr	ription		ovable	Total	Swipe	Location\I	Description			ovable	Total
#	(Results in DPM/	100cm ²)	Alpha	Beta	Alpha	#	(Results in D	PM/100cm ²)		Alpha	Beta	Alpha
1	F - tar	nk 101	0	-4	108	16						
2	F - ta	nk 101	0	-8	90	17				<u> </u>		_
3	F- pro	B pipes	0	_4	24	18				ļ		
4	F - ta	nk 651	0	-4	30	19						
5	F - ta	nk 651	0	4	60	20						<u> </u>
6	F-tar	nk 652	9	24	30	21		**************************************				
7	F - ta	nk Lsz	0	-16	54	22	_					
8	F - Va	lue	0	-50	36	23			10/	A		
9	F-Va	lve	٥	-8	84	24		-	///	,		
10	F-va	lue	0	-16	114	25						
11	F - pi	pes	9	٥	96	26						
12	F- pi	pes	9	50	102	27						
13	'	OF SURVE	ر			28		/				
14						29						
r5						30						
Date 1	Reviewed <u>5</u>	<u>-8-00</u> RS St	ıpervis	on.								



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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

1							
IN	INSTRUMENT DATA						
fg Eberline	Mfg Eberline	Mfg NeTech					
odel Sac-4	Model Sac-4	Model Electra					
Serial # 8 4 6	Serial #_/054	Serial #_/233					
Cal Due 8-15-00	Cal Due 8-23-00	Cal Due <u>5-1/00</u>					
Bkg O2 com	Bkg of som	Bkg/O com					
Efficiency 33%	Efficiency 33%	Efficiency 17%					
MDA 12.9	MDA <u>148 dom</u>	MDA <u>94 dom</u>					
MfgEberline	Mfg Eberline	Mfg Ne Tech					
Model BC-4	Model BC-4	Model Electra					
Serial #_959	Serial #_ 933	Serial #_3265					
Cal Due 7-19-00	Cal Due <u>7-14-00</u>	Cal Due <u>7-3-00</u>					
Bkg 4/2 com	Bkg 45 son	Bkg /					

Survey	Гуре _	Contan	ninatio	on
Building	731			
Location	Ce,/mg	/walls >6	m	Survey Area CC
Purpose	Reco	nnaisanc	e Level	Survey Area CC Characterization
		-707 -		
10,11 "				
Date _	<u>5-3</u> -	00	Time	2200

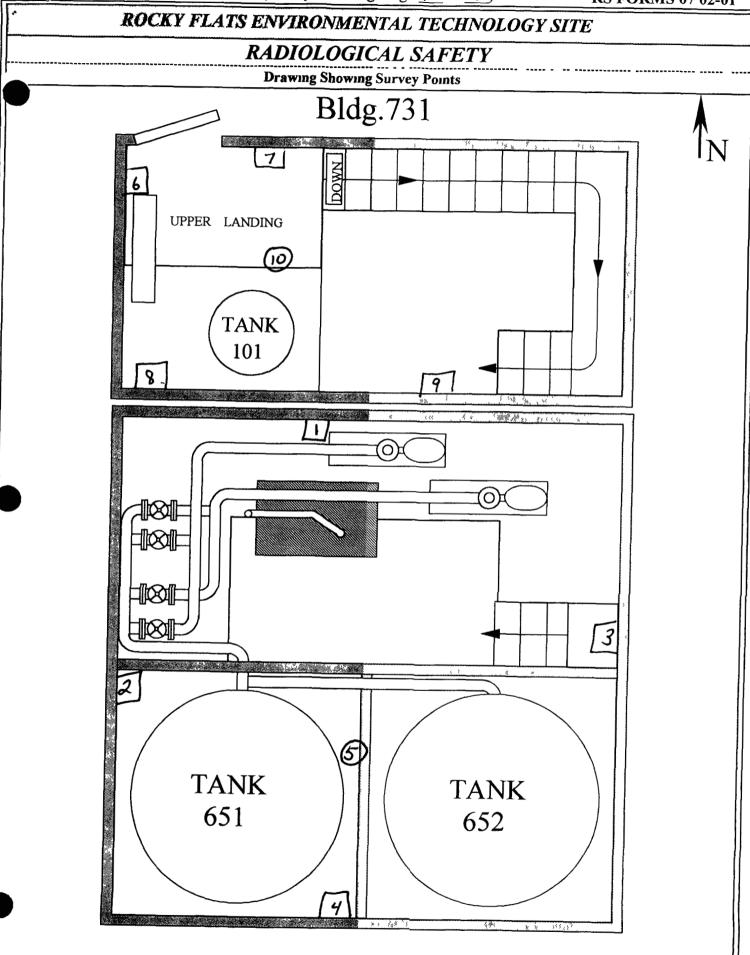
Bkg 40 cpm Bkg 45 cpm Bkg 5 cpm Bkg 5 cpm Bkg 5 cpm Bkg 5 cpm Bkg 5 cpm Bkg 5 cpm Bkg 5 cpm Bkg 6 cpm MDA 98 / cpm MDA 68 ficiency 58 cpm MDA 98 / cpm MDA 68 ficiency 6 cpm MDA 68 ficiency 6 cpm MDA 68 ficiency 6 cpm MDA 68 ficiency 6 cpm MDA 68 ficiency 6 cpm MDA 68 ficiency 6 cpm MDA 68 ficiency 6 cpm MDA 68 ficiency 6 cpm MDA 68 ficiency 6 cpm MDA 68 ficiency 6 cpm MDA 68 ficiency 6 cpm MDA 68 ficiency 6 cpm MDA 68 ficiency 6 cpm MDA 68 ficiency 7 cpm MDA 68 ficiency 6 cpm MDA

SURVEY RESULTS

1										
Swip #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	
	See MAD	0	-4	24	16	NA				
$\frac{1}{2}$	See MAD	3	-4	/8	17					
3	See MAP	0	-24	60	18					
4	see MAD	6	-24	18	19					
_5	See Map	0	-8	90	20					
6	See Map	3	12	24	21					
7	See MAP	0	-16	18	22			:		
8	See MAP	3	20	12	23					
9	See Map	0	7	36	24					
10	See MAD	6	-24	54	25					
11	END of Survey	/		NA	26					
12					27					
13					28					
14					29					
6	NA				30				NA	

Date Reviewed <u>5-8-00</u> RS Supervision

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA						
1fg Eberline	Mfg Eberline	Mfg NeTech				
Iodel Sac-4	Model Sac-4	Model Electra				
Serial # 8 46	Serial # 1054	Serial #				
Cal Due 8-15-00	Cal Due 8-23-00	Cal Due <u>5-11-00</u>				
Bkg O 2 com	Bkg o4 epa	Bkg 10 cpn				
Efficiency 33%	Efficiency 33%	Efficiency 17%				
MDA 12-9 don	MDA 148 don	MDA <u>94dpm</u>				
Mfg Eberline	MfgEberline	Mfg Netech				
Model BC-4	Model BC-4	Model Exectra				

Survey 7	Гуре	Contaminati	on
Building	731		
Location	731	Equipment	Survey Area CC
Purpose	Rec	onnaisance Leve	Survey Area CC l Characterization
		- 707 - <i>12</i> 0	

Date 5-3-00 ___ Time _2200

Serial # 3265

Cal Due 7-3-00 Bkg /epm

Efficiency 17%

MDA 981 don MDA 103 5 dam MDA 94 dom Comments Equipment Biased survey points

Serial # **933**

Cal Due 7-14-00

Bkg 45 cpn

Efficiency 25%

Serial # 957

Cal Due 7-/9-00

Bkg yugan Efficiency 25%

> 1 minute pats and swipes See map for locations has plot of Fixed contamination posted with labels

SURVEY RESULTS

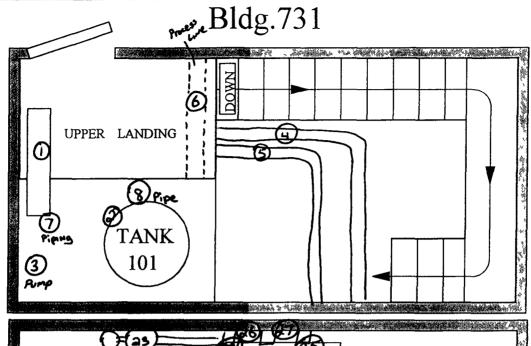
Ш	<u>JONY DI ROSODIO</u>										
	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	
<u>,</u>	1	See MAP	0	-12	42	16	See MAD	0	32	42	
	2	See MAP	3_	0	60	17	see MAD	0	24	24	
	3	see Map	0	24	192	18	see Mao	3	8	60	
	4	see MAP	6	76	90	19	see MAD	0	-56	42	
	5	see MAD	0	-28	48	20	See MAD	9	12	300	
	6	See MAD	6	-4	180	21	See MAp	0	20	216	
	7	See MAD	0	-24	30	22	See MAD	3	-20	180	
	8	See MAD	0	-40	66	23	See MAD	0	-8	42	
	9	See MAP	3	20	144	24	See Map	6	-40	192	
	10	See MAD	3	-28	60	25	See MAP	0	36	30	
	11	See MAD	18	-24	3162	26	See Mrs	3	-12	60	
	12	See MAD	15	-4	342	27	See Map	3	20	42	
	13	See MAP	0	48	/80	28	See Mas	174	88	24	
	14	See MAD	3	0	/8	29	See May	0	20	24	
	5	See MAD	0	-8	90	30	See MAD	0	-4	/8	

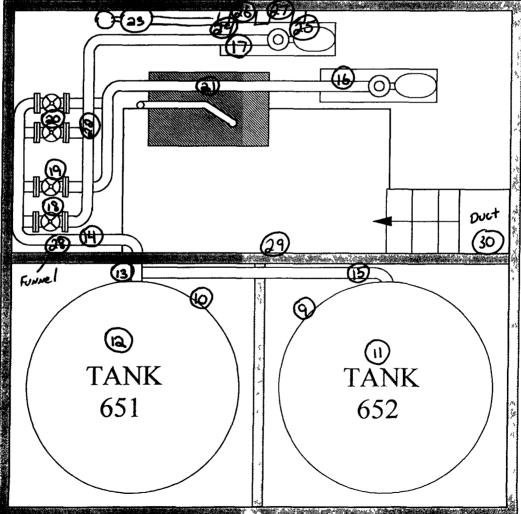
Date Reviewed 5-8-00 RS Supervision. Print Name Signature Emp #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points





Rev 02/00

SURVEY PACKAGE TRACKING FORM

Package ID 99-0002		Building 707 EXTERIOR TANKS				
Survey Area: DD		Survey Unit N/A				
Initiator/ Date	Release Date	Validation Date	Closure Date			
JJ 10/25/47	M 12/21/99	EM 5/9/00	10 /00 /00			

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002		Building 707 EX	T TANKS	Type 1				
Survey Area DD Survey Unit N/A			Area (m ²) <1000					
AND T-284 (HEI		UID ARGON), T-2		DIESEL), T209 THE RACHLORIDE), T				
Survey Type			Classification					
RLC Survey X	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown X			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans			
N/A	N/A	44	0	0	44			
Building		Туре		Survey Area				
Survey Unit			Area (m²)					
Survey Unit Desc	cription							
Survey Type			Classification					
RLC Survey □	FSS 🗆		Class 1 □ Class	2 □ Class 3 □ U	Jnknown 🗖			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans			
:								
Building.		Туре.	Survey Area					
Survey Unit			Area (m ²)					
Survey Unit Desc	cription							
Survey Type			Classification					
RLC Survey □	FSS 🗆		Class 1 🗖 Class	2 □ Class 3 □ U	Jnknown 🗖			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans			
Building		Туре		Survey Area				
Survey Unit			Area (m²)					
Survey Unit Desc	cription							
Survey Type			Classification					
RLC Survey □	FSS 🗆		Class 1 □ Class	2 □ Class 3 □ U	Jnknown 🗖			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans			

Page Superceled RDM 4/28/00 Change #4 INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0002 Building 707 EX		T TANKS Type 1					
Survey Area DD)	Survey Unit N/A	A Area (m²) <1000				
AND T-284 (HEI		T-223 (LIQUID NIT UID ARGON), T-20 225 (DIESEL)					
Survey Type	\		Classification				
RLC Survey X	\FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown X		
Random/Uniform Surface Activity Measurements	Bussed Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
N/A	N/A	88	0	0	88		
Building		Туре		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type			Classification	<u> </u>			
RLC Survey □	FSS 🗆		Class 1 □ Class		Jnknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
		88			88		
Building		Туре	Survey Area				
Survey Unit			Area (m²)				
Survey Unit Desc	eription						
Survey Type			Classification				
RLC Survey □	FSS 🗆		Class 1 □ Class	2 □ Class 3 □ U	Jnknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре•		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Description							
Survey Type			Classification				
RLC Survey □	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707 EXTERIOR TANKS
Survey Area: DD	Survey Unit: N/A
Survey Unit Description: Tanks T-223 (liquid Niti (Helium), T-208 (liquid Argon), T-206 (carbon tetrachlor (diesel)	
Building Information:	
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey 🗆
Building Type Type 1 X Type 2 Type 3	
Classification Class 1 □ Class 2 □ Class 3 □ Un	known X
Contaminants of Concern Plutonium X Uranium X	Other
Justification for Classification: N/A	
Special Support Requirements: Ladder, manli instrumentation may be required for access into	- · · · · · · · · · · · · · · · · · · ·
Special Safety Precautions: Access to areas or controls Review RWP requirements and survey nitrogen tanks	· · · · · · · · · · · · · · · · · · ·
Isolation Controls:	
Level 1 □ Level 2 □ N/A X	
Labeling Requirements: NONE	
Survey Package Implementation: N/A	
	\sim
/	
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Package ID: 99-0002	Building 707 EXTERIOR TANKS
Survey Area: DD	Survey Unit N/A

Survey Unit Description: TANKS T-223 (LIQUID NITROGEN), T-16 (DIESEL), T209 THROUGH T221 AND T-284 (HELIUM), T-208 (LIQUID ARGON), T-206 (CARBON TETRACHLORIDE), T-16 (DIESEL), T-290 (DIESEL), T-324 (DIESEL), T-325 (DIESEL)

	Minimum Survey/Sampling Measure	ement Requirements
Measurement	Number and Type	Comments
Surface Activity	FLOORS/WALLS < 2 meters N/A	SEE NOTE 1
asurements		SEE NOTE 2
	CEILINGS/WALLS > 2 meters N/A	SEE NOTE 3
		SEE NOTE 4
	EQUIPMENT	
	44 biased survey points on tanks and associated equipment	
	- 1 survey point per tank (tank proper)	
	- 1 survey point on piping/equipment	
	- Other equipment as determined by RCT	

Professional Part | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Page | Pag

Pa	kage ID: 99-0002	Building 707 EXTERIOR TANKS
Sur	ve) Area · DD	Survey Unit N/A

•	Minimum Survey/Sampling Measure	ment Requirements
Measurement	Number and Type	Comments
Surface Activity	FLOORS/WALLS < 2 meters N/A	SEE NOTE 1
Measurements		SEE NOTE 2
	CEILINGS/WALLS > 2 meters N/A	SEE NOTE 3
		SEE NOTE 4
	EQUIPMENT	
	88 biased survey points on tanks and associated equipment	
	- 2 survey points per tank (tank proper)	
	- I survey point beneath each tank	
	- 1 survey point on piping/equipment	
	- Other equipment as determined by RCT	

Package ID: 99-0002	Building: 707 complex tanks
Survey Area: DD	Survey Unit N/A

Survey Unit Description: TANKS T-223 (LIQUID NITROGEN), T-16 (DIESEL), T209 THROUGH T221 AND T-284 (HELIUM), T-208 (LIQUID ARGON), T-206 (CARBON TETRACHLORIDE), T-16 (DIESEL), T-290 (DIESEL), T-324 (DIESEL), T-325 (DIESEL)

Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters N/A	SEE NOTE 1
		SEE NOTE 2
	CEILINGS/WALLS > 2 meters N/A	SEE NOTE 3
		SEE NOTE 4
	EQUIPMENT	
	44 1 m ² surface scans shall be taken at each location identified for non-biased surface activity measurements. Locations found to be above the DCGL will be noted	
Media Samples	NONE	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Page 5 PAGE 5 SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-00	002	Building	707 complex tanks	
Survey Area: DD Survey		Survey 1	Unit N/A	
AND T-284 (HELIU			N), T-16 (DIESEL), T209 THROUGH T221 ON TETRACHLORIDE), T-16 (DIESEL), T-	
	Mınımum Survey/Samplıng	Measurer	nent Requirements	
Measurement	Number and Type		Comments	
Surface Scanning	FLOORS/WALLS < 2 meters N/A		SEE NOTE 1	
			SEE NOTE 2	
	CELINGS/WALLS > 2 meters N/A	A	SEE NOTE 3	
			SEE NOTE 4	
	EQUIPMENT 88 1 m ² surface scans shall be taken at location identified for non-biased surfameasurements. Locations found to be DCGL will be noted.	ace activity		
Media Samples	NONE			
Volumetric Samples	NONE			
Isotopic Gamma Scans	NONE			

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM/gont) #2

Package ID · 99-0002	Building 707 complex tanks
Survey Area: DD	Survey Unit N/A

Survey Unit Description: TANKS T-223 (LIQUID NITROGEN), T-16 (DIESEL), T209 THROUGH T221 AND T-284 (NELIUM), T-208 (LIQUID ARGON), T-206 (CARBON TETRACHLORIDE), T-16 (DIESEL), T-290 (DIESEL), T-324 (DIESEL), T-325 (DIESEL)

Survey/Sampling Instructions

NOTE 1. Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall documen the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

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Package ID: 99-0002	Building 707 complex tanks
Survey Area: DD	Survey Unit N/A

Survey Unit Description: TANKS T-223 (LIQUID NITROGEN), T-16 (DIESEL), T209 THROUGH T221 AND T-284 (HELIUM), T-208 (LIQUID ARGON), T-206 (CARBON TETRACHLORIDE), T-16 (DIESEL), T-290 (DIESEL), T-324 (DIESEL), T-325 (DIESEL)

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

Package ID: 99-0002	Building 707
Survey Area· DD \	Survey Unit N/A

Survey Unit Description TANKS T-223 (LIQUID NITROGEN), T-16 (DIESEL), T209 THROUGH T221 AND T-284 (HELIUM), T-208 (LIQUID ARGON), T-206 (CARBON TETRACHLORIDE), T-16 (DIESEL), T-290 (DIESEL), T-324 (DIESEL), T-325 (DIESEL)

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radion progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radio ogical Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building 707
Survey Area: DD	Survey Unit N/A

Survey Unit Description: TANKS T-223 (LIQUID NITROGEN), T-16 (DIESEL), T209 THROUGH T221 AND T-284 (HELIUM), T-208 (LIQUID ARGON), T-206 (CARBON TETRACHLORIDE), T-16 (DIESEL), T-290 (DIESEL), T-324 (DIESEL), T-325 (DIESEL)

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 9	99-0002	Building 707 E	XTERIOR TANK	S	
Survey Area:	DD	Survey Unit N	/A		
Change #	Description		Initiator/ Date	PRE	
	Added page 6A		12/21/99	MIZE	
	Deleted per to ducent	SCAN S MEAS	14/1/1/19	Mis I	01/
2	Replaced Specific	3" mars fortet	00/1/2/00	ALE III	'
3	Replaced on GA W/ROVI	sed as	De oltra	ME	
4	Replaced plage 2 W/ revise	d proc	Kony / 4/28/00	do	
5	Replaced page 4 w revised	Page	EDM /4/28/00	b	
6	Replaced page 5 W remain	d page	EM / 4/28/00	do	
7	Replaced page 9 W pages	9-9X	15m /519/00	d-	
	1 10 110				

*		 		-	
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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID 99-0002	Building 707 EXTERIO	OR TANKS		
Survey Area· DD	Survey Unit N/A			
Survey Type · Reconnaissance Level Characterization	n Survey X Final Status Sur	vey 🗆		
All Documentation Reviewed for Completion	RCT Supervisor	PRE		
Scan Surveys	\mathcal{A}	EM		
Total Activity Surveys	S	Kony		
Exposure Rate Surveys	NA	NA		
Removable Surveys	S	EDW		
Media Samples	NA	NA		
Volumetric Samples	NA	NA		
All Surveys and Samples Accounted For	RCT Supervisor	PRE		
Scan Surveys	1	KOM		
Total Activity Surveys	1	kony		
Exposure Rate Surveys	NA	NA		
Removable Surveys	1	Bory		
Media Samples	NA	NA		
Volumetric Samples	NA	NA		
Comments A total of 19 tanks (38 measure me T-16 was Identified twice, 3 tanks i	nts) were surveyed indirground, added	T-711		
		100		
RESS Manager Finted Name Employee #	KESS Ivianager Signature	Date		

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Page Superceled bory 5/9/00 Charge #7

	Beth By Piloth	CA FREE LISCHYIVE	NULSEL UECHINGILOX	ar Shirib
	NSTRUMENT DA	ΓA		
Mfg	Mfg		Survey Type:	
Model	Model	Model	Building	
Serial #	Serial #	Serial #	Location*	
Cal Due	Cal Due	Cal Due	Purpose	
Bkg	Bkg			
Efficiency	Efficiency	Efficiency	RWP#	
MDA	MDA	MDA	KWI "	
			Date	Time
Mfg	Mfg	Mfg	Duto	
Model	Model	Model	RCT/	
Serial #	Serial #		Print name	Signature Emp #
Cal Due		Cal Due		Digitatio Dilip "
Bkg	Bkg		RCT/	,
Efficiency		_ Efficiency	Print name	Signature Emp #
MDA		MDA		organica Darip "
PRL # :				
		<u>survey r</u>	RESULTS	
REMOVABLE Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Beta A	IRECT DIRECT Beta 1/100 cm² DPM/100 cm²	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	DIRECT Beta DPM/100 cm² DPM/100 cm²
24 25			50	
Date Reviewed:	RS Su	pervision:	nt Name	Signature Emp #

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DATEN TECHNOLOGY STEE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE.

SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements.

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA					
Ifg Eberline	Mfg Eberline	Mfg NeTech			
Model Sac-4	Model Sac-4	Model Electra			
Serial # 8 46	Serial # 1054	Serial #_1518			
Cal Due <u>8-15-00</u>	Cal Due <u>8 - 25 - 00</u> 0	Cal Due 4-29-00			
Bkg O.2 cpm	Bkg 6.3 com	Bkg O com			
Efficiency 33%	Efficiency 33%	Efficiency 17%			
MDA 25 dpm	MDA 30 dom	MDA <u>94 dpm</u>			
8 m	8-1-00	•			
Mfg Eberline	Mfg <u>Eberline</u>	Mfg			
Model BC-4	Model BC-4	Model			
Serial # 93 9	Serial # 833	Serial #			
Cal Due <u>7-19 00</u>	Cal Due <u>7-14-00</u>	Cal Due			
Bkg 40 cpm	Bkg <u>36 cpm</u>	Bkg			
Efficiency 25%	Efficiency 25%	Efficiency			
MDA 98.1 don	MDA <u>937 dpm</u>	MDA			
	ment Biased surv	ey points			
1 4	. 1	C 1			

Survey 1	_{Γype} <u>Conta</u>	mination	
Building	Exterior 70	07 Tan	ks
_	Various Ta		Survey Area DD
Purpose	Reconnaisar	ice Level C	haracterization
	20.707	100/1	

Comments Equipment Biased survey points T 290 tank & Piping under a yound 1 minute pats and swipes See map for locations of ing cressible (Also III Concern).

T. 324, T. 325 not found - unable to locate - assume unduground tank or they were talen off site. Did to T-11/ Presil tank. (noton list)

SURVEY RESULTS

Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	7-223	0	0	42	16	T- 214 piping	0	-12	18
2	T-223 PIPING	0	36	36		T- 215	0	8	24
II 1	T-16	0	-36	48	18	T- 215 pipins	3	56	36
4	T-16 piping	0	-16	36	19	T-216	0	16	42
	7-209	3	28	90	20	T-216 Piping	3_	12	12
6	T-209 piping	3	12	48		T-217	6	-36	42
_	T-210	0	16	48	22	T-217 pipers	0	16	54
8	T-210 piping	3	40	36		T-218	0	-8	30
	T. 211	0	20	42	24	T-218 piping	6	-4	30
	T-211 piping	3	5Z	48		7-219	0	16	36
	T-212	3	12	60	26	T-219 piping	0	12	48
12	T-212 piping	0	8	36	27	T-220	0	-4	18
	T-213	0	-42	48	28	T- 220 piping	0	32	48
14	T-213 piping	3	-4	42	29	T-22/	3	-36	36
	T-214	0	-4	36	30	T-221 pising,	0	4	42

Date Reviewed 5-2-00 RS Supervision

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE								
RADIOLOGICAL SAFETY								
					y Points	I Pam	ovable_	Total
Swipe Location\Description (Results in DPM/100cm ²)	Remo Alpha	Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha	Beta	Alpha
31 7- 284	0	44	18	61	NA	ļ	ļ	
31 T- 284 32 T- 284 Dipins 33 T1 208	3	84	36	62		ļ		
33 71 208	0	16	48	63				
34 7- 209 piping	0	-4	78	64		ļ		
35 1-206 36 1-206 mins 37 T-711	0	-16	66	65				
36 T-206 ping	6	0	42	66				[
37 T-211	3	-4	78	67_				
38 T-7/1 pipina	0	16	48	68	\		<u></u>	
39 END OF SUNEY			NA	69				
40				70	<u> </u>		 	
41				71			<u> </u>	
42		/		72	\		<u> </u>	
3	/			73			!	
44				74	<u> </u>			
45	/		 	75			ļ	
46		<u></u>		76				
47				77			ļ	
48				78				
49				79				
50				80				
51		<u> </u>		81				
52				82	\	\ <u> </u>		
53				83				
54				84				
55				85				
56				86				
57				87				
8 /				88				
59 /				89				
60 NA				90				NA

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SURVEY PACKAGE TRACKING FORM

Package ID. 99-0002		Building. 711, 711A, 718				
Survey Area · EE		Survey Unit N/A				
Initiator/ Date	Release Date	Validation Date	Closure Date			
Af 19/25/49	M 12/21/99	KDM 5/15/00	15/00			

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	0002	Building 711, 7	11A, 718	1A, 718 Type 1		
Survey Area EE		Survey Unit N/A		Area (m ²) 393		
Survey Unit Description BUILDINGS 711 (COOLIN COOLING TOWER), 718 (COOLING TOWER SERV				EMERGENCY DI	ESEL PUMP FOR	
Survey Type			Classification			
RLC Survey X	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown X	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
40	30	30	2	4	40	
Building		Туре		Survey Area		
Survey Unit			Area (m²)			
Survey Unit Desc	cription					
Survey Type			Classification			
RLC Survey □	FSS 🗆		Class 1 Class	2 ☐ Class 3 ☐ U	Jnknown 🗆	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building		Туре	Survey Area			
Survey Unit			Area (m²)			
Survey Unit Desc	cription					
Survey Type			Classification			
RLC Survey □	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown □	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
'						
Building		Туре		Survey Area		
Survey Unit			Area (m²)			
Survey Unit Desc	cription					
Survey Type			Classification	· · · · · · · · · · · · · · · · · · ·		
• • •			1			
RLC Survey □	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown 🗆	
RLC Survey Random/Uniform Surface Activity Measurements	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Class 1 □ Class Media Samples	2 □ Class 3 □ U Volumetric Samples	Surface Activity Scans	

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 711, 711A, 718
Survey Area: EE	Survey Unit: N/A
Survey Unit Description: Buildings 711 (cooling to 718 (cooling tower service building)	ower), 711A (emergency diesel pump for cooling tower),
Building Information:	
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey 🗆
Building Type Type 1 X Type 2 □ Type 3 □	
Classification Class 1 □ Class 2 □ Class 3 □ Un	known X
Contaminants of Concern Plutonium X Uranium X	Other
Justification for Classification: N/A	
Special Support Requirements: Ladder, manli	ft, scaffolding, and/or remote reach tools and
instrumentation may be required for access into	overhead areas – use caution in overheads
Special Safety Precautions: Notify security per such as platforms, roofs, or stairs. Access to roof controls. Review RWP/facility requirements and 711 (cooling tower) may be hazardous – use cause.	fs/structures areas may require additional d surveys prior to entry Roof area on Building
Isolation Controls:	
Level 1 Level 2 N/A X	
Labeling Requirements: NONE	
Survey Package Implementation: N/A	1
	5/99 5/99 5/00
RESS Manager Printed Name Employee # RESS	

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Package ID: 99-0002

Building 711, 711A, 718

Survey Area: EE

Survey Unit N/A

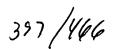
Survey Unit Description: BUILDINGS 711 (COOLING TOWER), 711A (EMERGENCY DIESEL PUMP FOR COOLING TOWER), 718 (COOLING TOWER SERVICE BUIDING)

Minimum Survey/Sampling Measurement Requirements					
Measurement	Number and Type	Comments			
rface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1			
asurements	40 <u>unbiased</u> survey points uniformly distributed as follows	SEE NOTE 2			
	- 25 survey points inside of the cooling tower structure (Building 711)	SEE NOTE 3 SEE NOTE 4			
	- 10 survey points within Building 718				
	- 5 survey points beneath pump/equipment associated with emergency diesel pump (711A)				
	NO <u>biased</u> survey points				
	CEILINGS/WALLS > 2 meters				
	30 biased surveys of ceilings and walls of 711 and 718				
	EQUIPMENT				
	30 <u>biased</u> survey points on equipment with one or more samples from				
	- 12 survey points on emergency diesel pump (Building 711A) and related piping/equipment				
	- 8 survey points on piping/associated equipment (where locations are accessible through reach tools) within Building 718				
	- 10 survey points on piping/associated equipment (where locations are accessible through reach tools) within Building 711				

Package ID: 99-0002	Building 711, 711A, 718
Survey Area: EE	Survey Unit. N/A

Survey Unit Description BUILDINGS 711 (COOLING TOWER), 711A (EMERGENCY DIESEL PUMP FOR COOLING TOWER), 718 (COOLING TOWER SERVICE BUIDING)

Minimum Survey/Sampling Measurement Requirements				
Measurement	Number and Type	Comments		
Surface Scanning	FLOORS/WALLS < 2 meters	SEE NOTE 1		
	40 1 m ² surface scans shall be taken at each location identified for surface activity	SEE NOTE 2		
	measurements Locations found to be above the	SEE NOTE 3		
	DCGL will be noted	SEE NOTE 4		
	CEILINGS/WALLS > 2 meters NONE			
	EQUIPMENT NONE			
Media Samples	Two biased paint (media) samples collected as follows	SEE NOTE 5		
	- 1 from building 718 (cooling tower service building)			
	- 1 from building 711 (cooling tower)			
Volumetric	Four sludge samples from Building			
Samples	7111 cooling tower			
Isotopic Gamma	NONE			
Scans				



Package ID: 99-0002

Building 711, 711A, 718

Survey Area: EE

Survey Unit. N/A

Survey Unit Description: BUILDINGS 711 (COOLING TOWER), 711A (EMERGENCY DIESEL PUMP FOR COOLING TOWER), 718 (COOLING TOWER SERVICE BUIDING)

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alphathen beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

Package ID: 99-0002	Building 711, 711A, 718
Survey Area: EE	Survey Unit N/A

Survey Unit Description: BUILDINGS 711 (COOLING TOWER), 711A (EMERGENCY DIESEL PUMP FOR COOLING TOWER), 718 (COOLING TOWER SERVICE BUIDING)

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements



Package ID: 99-0002Building. 707Survey Area: EESurvey Unit. N/A

Survey Unit Description: : BUILDINGS 711 (COOLING TOWER), 711A (EMERGENCY DIESEL PUMP FOR COOLING TOWER), 718 (COOLING TOWER SERVICE BUIDING)

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- 2 To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected.
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well
- 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building 707
Survey Area: EE	Survey Unit N/A

Survey Unit Description BUILDINGS 711 (COOLING TOWER), 711A (EMERGENCY DIESEL PUMP FOR COOLING TOWER), 718 (COOLING TOWER SERVICE BUIDING)

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0002		Building 711, 711A, 718		
		Survey Unit N/A		
Change #	Description	<u> </u>	Initiator/ Date	PRE
1	Added page 6A		01 12/2/99	ME
2	Deloked per to dient	XAN 15 mens	12/2/99	11/2 B) 0/1
2	Replaced pg 6 to dolete.	spec. B'mens	m a/18/00	MBEL
3	Replaced pg 6A W/ne	used pa	Or 01/18/00	ME
4	Replaced page 9 w/ pages 9.	- // //	150m 4/28/00	p438
·				

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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID. 99-0002 Building 711, 711A, 718				
Survey Area: EE	Survey Unit N/A			
Survey Type: Reconnaissance Level Characterization S	Survey X Final Status Surv	еу 🗆		
All Documentation Reviewed for Completion	RCT Supervisor	PRE		
Scan Surveys	1	DOW		
Total Activity Surveys	1	Eoul		
Exposure Rate Surveys	NA	N4		
Removable Surveys	1	Edul		
Media Samples	NA O	NA O		
Volumetric Samples	NA 2	NA®		
All Surveys and Samples Accounted For	RCT Supervisor	PRE		
Scan Surveys	1	Doy		
Total Activity Surveys	1	DOW		
Exposure Rate Surveys	NA	NA		
Removable Surveys	1	EDW		
Media Samples	NA O	NA O		
Volumetric Samples	NA D	NA 🟵		
Comments (D) no medie samples taken, no pant at locations identified in Survey (2) ho volumetric samples taken, 711 florded w/20 medis of water				
KESS Ivianager Printed Name Employee #	KESS Wallager Signature	5 3 00 Date 5/5/00 Date		

and the second s	EMERICAN CONTRACT	A PART HE CANALE	OMITAL, IPECTEUMO)	ilo)est Stud	
I	NSTRUMENT DAT	ra .			
Mfg	Mfg	Mfg	Survey Type:		
Model	Model		Building		
Serial #	Serial #	Serial #	Location*		
Cal Due	Cal Due		Purpose		
Bkg	Bkg.				
Efficiency	Efficiency	Efficiency	RWP#		
MDA	MDA	MDA			· · · · · · · · · · · · · · · · · · ·
			Date	Time	
Mfg	Mfg				
Model	Model	Model	RCT	1	/
Serial #	Serial #	Serial #	Print name		Emp #
Cal Due		Cal Due	,		F
Bkg	Bkg	Bkg	RCT	1	/
Efficiency		Efficiency		Signature	Emp #
MDA	MDA	MDA		Č	1
PRL#:Comments					
REMOVABLE Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	Beta A DPM/100 cm ² DPM	RECT DIRECT Beta DPM/100 cm	REMOVABLE Alpha Beta DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46	Alpha	DIRECT Beta M/100 cm²
22	RS Su	pervision:	47		
	_	Pr	int Name	Signature	Emp #

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RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE.

SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

Rev 05/98

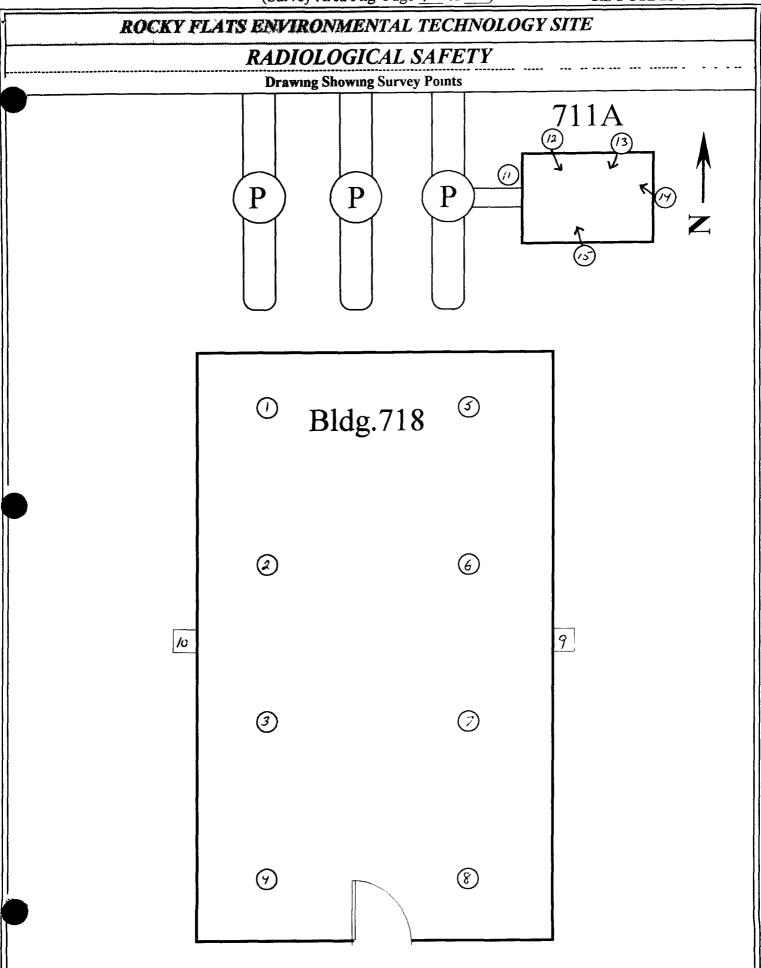
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE INSTRUMENT DATA Survey Type Contamination Mfg Eberline Mfg NeTech fg <u>Eberline</u> Building 711, 711A, 718 Model Sac-4 Model Electra fodel Sac-4 Serial #_1054_ Survey Area EE Serial # 846 Serial # /5/8 Location 7/1A + 7/8Purpose Reconnaisance Level Characterization Cal Due 8-16-00 Cal Due 2.27.00 Cal Due 6-29-00 Bkg ozen Bkg Ocpm Bkg 0-1 4pm RWP# 00-707 -1204 Efficiency 17% Efficiency_33%_ Efficiency 33% MDA 94 dpm MDA 11.5 dpm MDA 129 dpm Date 5-2-00 Time 1630 Mfg Eberline Mfg Eberline Mfg \(\) Model BC-4 Model BC-4 Model Serial # 959 Serial # 83 3 Serial # Cal Due 7-19-00 Cal Due 7-14 00 Cal Due Bkg 35 con Bkg 47 con Bkg _ Efficiency 25% Efficiency 25% Efficiency Print name / Signature MDA 925 don MDA 1013 don MDA Comments Floor / Walls < 2 meters Unbiased survey points 1 m² scans, 1 minute pats and swipes See map for locations Building 711 (inside not accessible) **SURVEY RESULTS** Removable Removable Total Total Swipe Location\Description Swipe Location\Description (Results in DPM/100cm²) (Results in DPM/100cm²) Beta Alpha Beta Alpha Alpha Alpha 24 0 24 16 See MAD -20 17 30 18 -36 24 19 20 -12 21 3 36 40 22 48 42 23 32 0 36 24 0 -20 18 25 64 0 78 26 96 0 27 0 28 -44 29

Date Reviewed. 5200 RS Supervision

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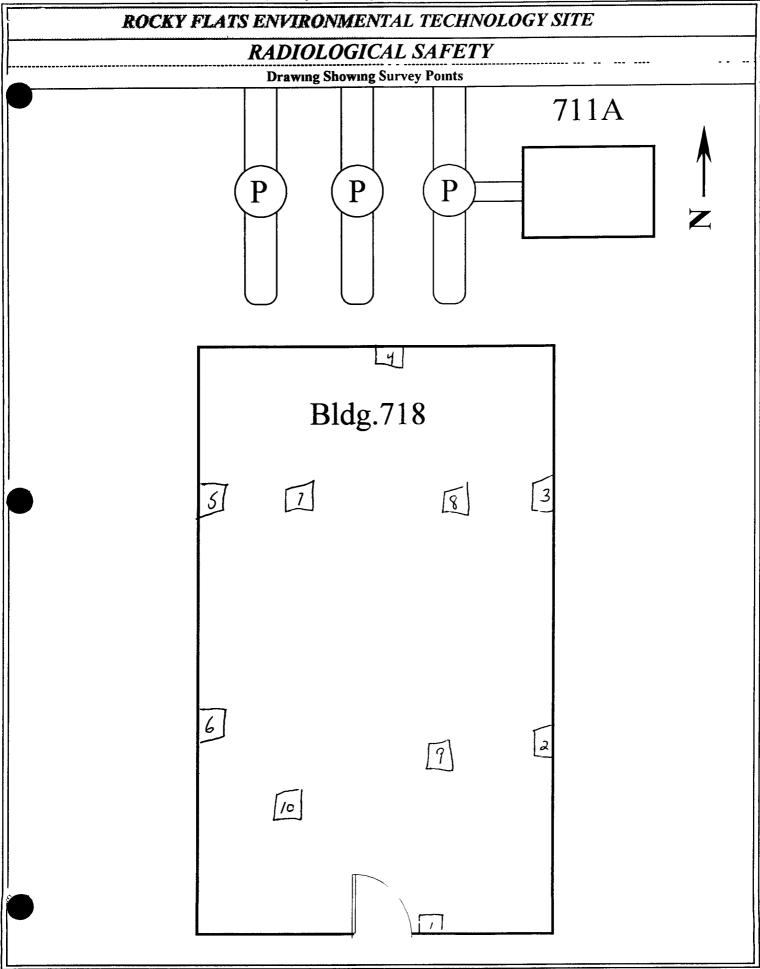
180

30



Rev 02/00

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE INSTRUMENT DATA Contamination Mfg Eberline Mfg NeTech Survey Type fg Eberline 711, 711A, 718 Building odel Sac-4 Model Sac-4 Model Electra Serial # 1054 Survey Area EE Serial # 846 Serial # /5/8 Location 7/8 Reconnaisance Level Characterization Purpose Cal Due 8-23-00 Cal Due 8-15-00 Cal Due 6:29-00 Bkg 01 com Bkg 02 com Bkg O com RWP# 00-707-1204 Efficiency 33% Efficiency 33% Efficiency /7% MDA 94 dpm MDA 115 dpm MDA 129 dan Date <u>5-2-00</u> Time <u>/630</u> Mfg Eberline Mfg Eberline Mfg \ Model BC-4 Model BC-4 Model ' Serial # 959 Serial # 833 Serial # Cal Due 7-19-00 Cal Due 7-14-00 Cal Due NA Bkg 35 00 Bkg <u>43 epm</u> Bkg Efficiency 25% Efficiency Efficiency_25% MDA 925 don MDA 1013 dom MDA Comments Ceiling / Walls > 2 meters Biased survey points 1 minute pats and swipes See map for locations Building 711 (inside not accessible **SURVEY RESULTS** Removable Total Removable Total Swipe Location\Description Location\Description Swipe Beta (Results in DPM/100cm²) (Results in DPM/100cm²) Alpha Alpha Alpha 24 16 24 17 18 18 -16 36 19 O 24 42 0 20 -8 0 0 21 0 22 -16 6 23 36 40 24 -8 10 25 OF Surve NA 26 12 27 13 28 14 29 NA 30 Date Reviewed 5200 RS Supervision. Print Name Signature Emp



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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA					
1fg Eberline	Mfg Eberline	Mfg NeTech			
fodel Sac-4	Model Sac-4	Model Electra			
Serial # 846	Serial #_/054	Serial # 3265			
Cal Due 8-15-0 0	Cal Due 8-23-00	Cal Due 7-3-00			
Bkg o.l com	Bkg 0 2 4pm	Bkg 4 cpm			
Efficiency 33%	Efficiency 33%	Efficiency 17%			
MDA <u>11.5 dpm</u>	MDA /2 9 dpm	MDA <u>94 dan</u>			
Mfg Eberline	Mfg Eberline	Mfg \			
Model BC-4	Model BC-4	Model			
Serial # 95-9	Serial #_833	Serial #			
Cal Due <u>7-19-00</u>	Cal Due 7-14-00	Cal DueA			
Bkg 35 cpn	Bkg 43 epm	Bkg			
Efficiency 25%	Efficiency 25%	Efficiency			
MDA 925 dpm	MDA 1013 dpm	MDA\			
	ment Biased surve	ey points			
1 manuals made and amount of Contractions					

Survey 7	Type Contamination	n
Building	711, 711A, 718	
Location	711A + 718	Survey Area EE
Purpose	Reconnaisance Level	Characterization
DWD#	00-707-1204	

Date 5-2-00 Time 1630



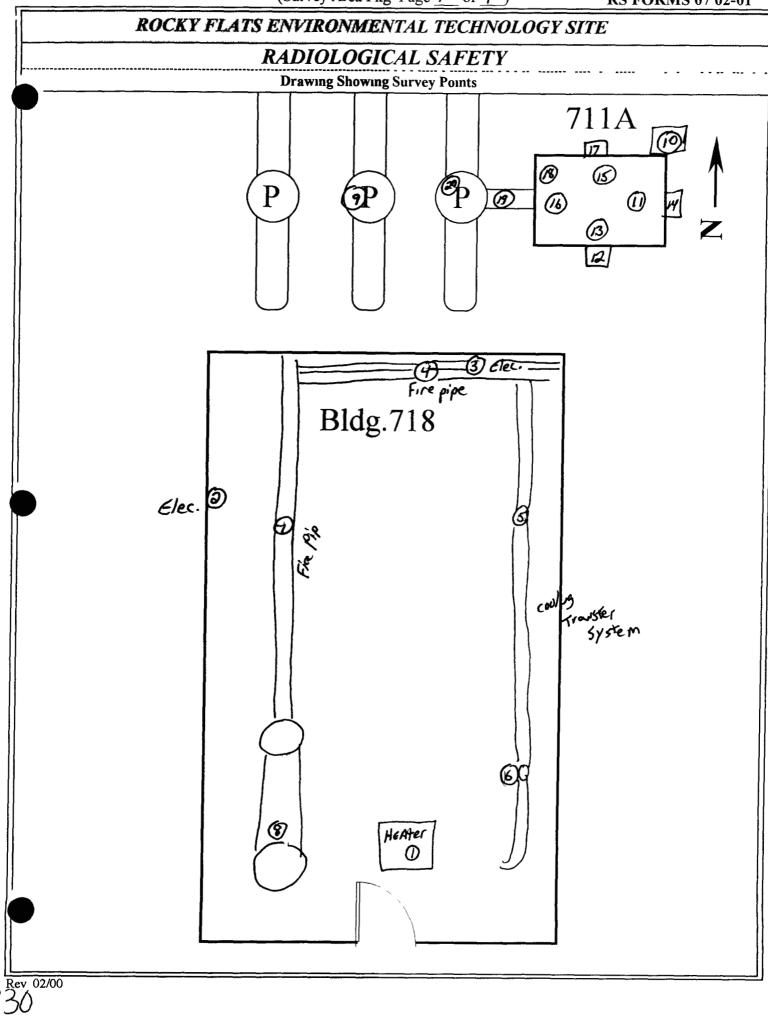
1 minute pats and swipes See map for locations

inside not accessible Building 711

SURVEY RESULTS

ı	SUNVET RESULTS									
	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
	1	Lee Mys	0	12	24	16	See MAD	3	48	48
	2	See MAD	3	-12	18	17	See Map	0	12	12
	3	See Map	0	24	6	18	See Mrp	0	-24	72
	4	See Map	6	-12	24	19	See MAP	0	60	60
	5	See Mino	6	-16	36	20	See Map	3	36	66
-	6	See Map	3	-24	48	21	End of Survey			NA
	7	See Mrs	6	28	18	22				
	8	Sec MAD	0	-24	42	23				
	9	See MAD	9	28	30	24				
	10	See MAD	6	- 8	30	25				
	11	See MAD	9	16	42	26				
	12	See Mrs	6	0	24	27				
	13	See MAP	0	4	42	28				
	14	See Map	3	-20	48	29				
	5	See MAD	3	-8	60	30	NA			

Date Reviewed. 5-200 RS Supervision



SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002		Building 711 (EXTERIOR/ROOF)			
Survey Area: FF		Survey Unit N/A			
Initiator/ Date	Initiator/ Date Release Date		Closure Date		
J 10/25/29	J 12/21/19	d =/2/00	d- 5/2/00		

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	002	Building 711		Type 1	
Survey Area FF		Survey Unit N/A		Area (m ²) per building	
Survey Unit Description ROOF OF BUILDING 711 (COOLING TOWER)					
Survey Type			Classification		
RLC Survey X	FSS □		Class 1 □ Class	2□ Class 3□ U	Jnknown X
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	0	0	0	0	30
Building		Туре		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Description					
Survey Type			Classification		
RLC Survey □ FSS □		Class 1 □ Class 2 □ Class 3 □ Unknown □			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Туре		Survey Area	
Building Survey Unit		Туре	Area (m²)	Survey Area	
	ription	Туре	Area (m²)	Survey Area	
Survey Unit	ription	Туре	Area (m²) Classification	Survey Area	
Survey Unit Desc	FSS 🗆	Туре			Jnknown □
Survey Unit Description Survey Type		Type Equipment Surface Activity Measurements	Classification		Jnknown □ Surface Activity Scans
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Blased Surface Activity	Equipment Surface Activity	Classification Class 1 Class	2 Class 3 U	Surface Activity
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Blased Surface Activity	Equipment Surface Activity	Classification Class 1 Class	2 Class 3 U	Surface Activity
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements	FSS Blased Surface Activity	Equipment Surface Activity Measurements	Classification Class 1 Class	2 □ Class 3 □ U Volumetric Samples	Surface Activity
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples	2 □ Class 3 □ U Volumetric Samples	Surface Activity
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples	2 □ Class 3 □ U Volumetric Samples	Surface Activity
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples Area (m²)	2 Class 3 U Volumetric Samples Survey Area	Surface Activity
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description Survey Unit Description	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples Area (m²)	2 Class 3 U Volumetric Samples Survey Area	Surface Activity Scans

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002		Building 711 (EXTERIOR/	ROOF)			
Survey Area: FF		Survey Unit N/A				
Survey Unit Description: Roof of Building 711 (cooling tower)						
Building Information:						
Survey Type Reconnaissance Level C	Characterization	Survey X Final Status Survey □				
Building Type Type 1 X Type 2 🗖	· · · · · · · · · · · · · · · · · · ·					
Classification Class 1 Class 2	Class 3 🗖 U	Jnknown X				
Contaminants of Concern Plutonium	X Uranium X	Other 🗆				
Justification for Classification:	N/A					
Special Support Requirements: instrumentation may be required	•					
Special Safety Precautions: No such as platforms, roofs, or stairs controls Review RWP/facility re 711 (cooling tower) may be hazar	Access to ro	ofs/structures areas may required and surveys prior to entry Room	e additional			
Isolation Controls:						
Level 1 🗖 Level 2 🗖 N/A X						
Labeling Requirements: NONE						
Survey Package Implementatio	n: N/A					
			(2/00 (2/00			
RESS Manager Printed Name	Employee # Ri	ESS Manager Signature	Date			

Package ID: 99-0002	Building 711 (EXTERIOR/ROOF)
Survey Area: FF	Survey Unit N/A

Survey Unit Description. ROOF/EXTERIOR OF BUILDING 711 (COOLING TOWER)

Minimum Survey/Sampling Measurement Requirements			
Measurement	Number and Type	Comments	
Surface Activity	ROOF/EXTERIOR WALLS	SEE NOTE 1	
Measurements	30 uniformly distributed survey points	SEE NOTE 2	
	distributed as follows	SEE NOTE 3	
	- 10 on walls (< 2 meters)	SEE NOTE 4	
	- 20 on roof of Building 711		
	FLOORS/WALLS < 2 meters N/A		
	CEILINGS/WALLS > 2 meters N/A		
	EQUIPMENT N/A		
	-		



	Comments SEE NOTE 1 SEE NOTE 2
Number and Type F/EXTERIOR WALLS 12 surface scans shall be taken at each identified for surface activity rements. Locations found to be about will be noted	casurement Requirements Comments SEE NOTE 1 SEE NOTE 2 See NOTE 3
Number and Type F/EXTERIOR WALLS n ² surface scans shall be taken at each identified for surface activity rements. Locations found to be about will be noted	Comments SEE NOTE 1 SEE NOTE 2 SEE NOTE 3
F/EXTERIOR WALLS n ² surface scans shall be taken at each in identified for surface activity rements. Locations found to be about the protection of the surface activity rements. Locations found to be about the surface activity rements.	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3
n ² surface scans shall be taken at each indentified for surface activity rements. Locations found to be about the noted	sh SEE NOTE 2 sve the SEE NOTE 3
on identified for surface activity rements. Locations found to be about the noted.	ve the SEE NOTE 3
rements Locations found to be about will be noted	we the
	SEE NOTE 4
DRS/WALLS < 2 meters N/A	
INGS/WALLS > 2 meters N/A	
PMENT N/A	
<u> </u>	
T	
E.	
E	
	INGS/WALLS > 2 meters N/A PMENT N/A

RSFORMS-16 01-8

SURVEY PACKAGE SURVEY SAMPLING INSTRUCTIONS FORM (cont)

Package ID. 99-0002	Building 711		
Survey Area. FF	Survey Unit N/A		
Survey Unit Description. ROOF/EXTERIOR OF BU	UILDING 711 (COOLING TOWER)		
S	Treatment and		
\	ing Instructions		
NOTE 1 Representative surveys of the area will be tak "Contamination Monitoring Requirements", for the follows:			
- Direct alpha contamination			
- Direct beta contamination			
- Removable alpha contamination			
- Removable beta contamination			
- 1m ² scan measurements for alpha then beta/gamma	contamination		
NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package			
NOTE 3 Areas which are posted/considered Nigh Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped			
NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received			

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Package ID: 99-0002	Building 711			
Survey Area: FF	Survey Unit N/A			
Survey Unit Description: ROOF/EXTERIOR OF BUILDING 711 (COOLING TOWER)				

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (conf)

Package ID. 99-0002	Building• 707
Survey Area: FF	Survey Unit N/A
Survey Unit Description ROOF/EXTERIOR OF E	BUILDING 711 (COOLING TOWER)

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer of the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building: 707		
Survey Area: FF	Survey Unit N/A		
Survey Unit Description · ROOF/EXTERIOR OF BUILDING 711 (COOLING TOWER)			

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

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- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos.
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 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID:	99-0002	Building 711 (E	XTERIOR/RO	OF)		
Survey Area: FF		Survey Unit N/A				
Change #	Description		Initiator/ Date	PRE		
1	Added page 6A		9) 12/21/99	All		
	Dalched Def to dias	rt/SCAN / MEAS	Can 12/2/18	no m		
2	Replaced pg 6 to dekte &	coeke a mass	Malpho	ABE		
7	Designed De 64	anced or	De alaha	ABS.		
4	REPLACED PO 9 W/ 9-	9A	D 5/2/00	ABE .		

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID • 99-0002	Building 711 (EXTERIOR/ROOF)			
Survey Area: FF	Survey Unit N/A			
Survey Type Reconnaissance Level Characterization	Survey X Final Status S	urvey 🗆		
All Documentation Reviewed for Completion	RCT Supervisor	PRE		
Scan Surveys	1	do		
Total Activity Surveys	1	b		
Exposure Rate Surveys	NA	NA		
Removable Surveys	1	do		
Media Samples	NA	NA		
Volumetric Samples	NA	NA		
All Surveys and Samples Accounted For	RCT Supervisor	PRE		
Scan Surveys	1	do		
Total Activity Surveys	1	dr		
Exposure Rate Surveys	NA	NA		
Removable Surveys	SILENT /	do		
Media Samples	NA	NA		
Volumetric Samples	NA	NA		
Comments				
		5 J 08		
		5/2/00 Date		
		5/2/00 Date		

	Nyla A Tifiza	- 115 - 1588 - 1588 - 15 870	YNSIZUL, III	(C)EINIOXL(Ö).	The state of the s	
I	NSTRUMENT D	ATA			and the second s	ma to the manufacture and the
Mfg.	Mfg		Survey Tv	ne:		
Model	Model	Model	Building			
Serial #	Serial #	Serial #	Location*			
Cal Due	Cal Due		Purpose			
Bkg	Bkg					
Efficiency	Efficiency	Efficiency	RWP#			
MDA	MDA	MDA	***			
	7		Date		Time	
Mfg	Mfg	Mfg				
Model	Mfg Model	Model	RCT		/	/
Serial #	Serial #	Serial #	P	rint name	/ Sıgnatuı	e Emp#
Cal Due	Cal Due	Cal Due			J	r
Bkg	Bkg		RCT		<u>/</u>	/
Efficiency	Efficiency	Efficiency		rint name	Signatui	e Emp#
MDA		MDA				•
PRL#:						
		SURVEY	PESTILTS			
		DIRECT DIRECT	REMOVABLE			
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15		Alpha Beta DPM/100 cm² DPM/100 cm²	Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	DPM/100 cm ²	Alpha DPM/100 cm²	DPM/100 cm ²
16 17 18 19 20 21			41 42 43 44 45			
22	RS	Supervision:	47 48 49 50		Signature	

EUNTENLIEUCHNOLOGY NUBE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE.

SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

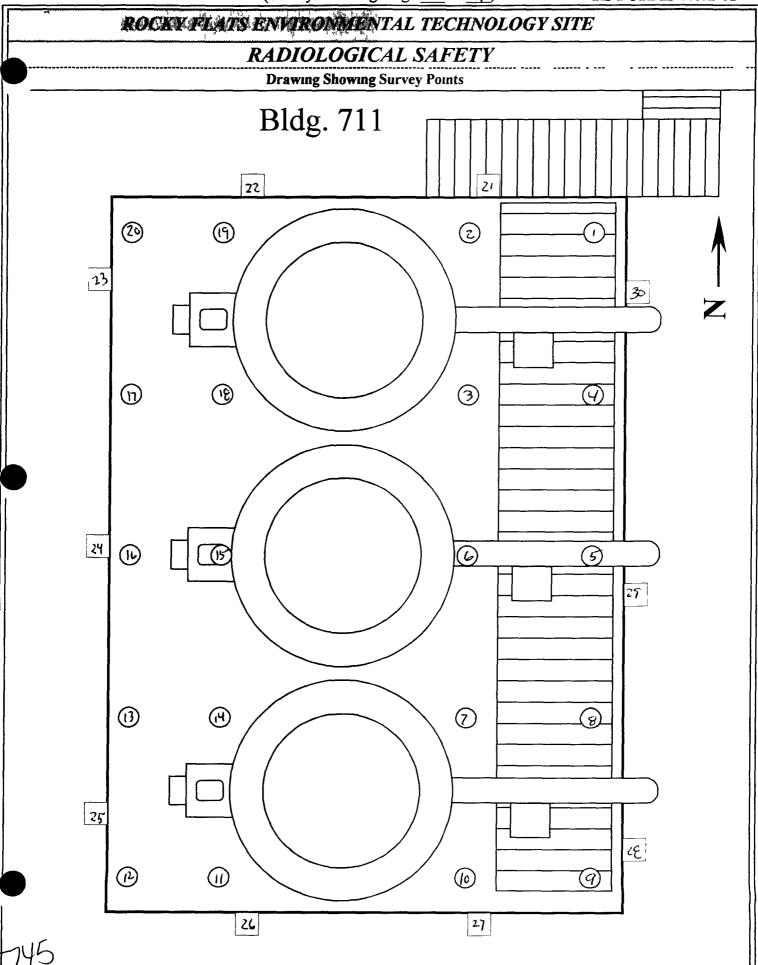
IN	STRUMENT DATA				~			-
fg Eberline	Mfg Eberline	Mfg NeTech	Survey	Гуре	Contai	<u>mination</u>		
wlodel Sac-4	Model Sac-4	Model_Electra	Building	711				
Serial #_846	Serial # (054	Serial # 2307	Location	711	R∞f		Survey Area	FF
Cal Due <u>8-15-00</u>	Cal Due 8-23-00	Cal Due 3-12-66	Purpose	Reco	onnaisan	ce Level Cl	<u>iaracterizatio</u>	n
Bkg O, Z cpm	Bkg <u>0.3 c?m</u>	Bkg 2 cpm			1			
Efficiency_33%_	Efficiency 33%	Efficiency 19.4%	RWP#	N	4			
MDA 12.4 08m	MDA 13 9 crm	MDA 94 prm	Date _	5-1	-00	Time	1400	
Mfg <u>Eberline</u>	Mfg Eberline	Mfg						
ModelBC-4	Model BC-4	Model						
Serial # 959	Serial # 833	Serial #						
Cal Due 7-19-00	Cal Due 7-14-00	Cal Due						
Bkg 40 com	Bkg 36cpm	Bkg	RCT	NA				
Efficiency 25%	Efficiency 25%	Efficiency		Print na	ame /	Signature	/ Emp	#
MDA 98.1 Dem	MDA 937 DPM	MDA NA			,	5.51141410	, 13mp	"
	/Exterior Walls < 2	meters Unbiased	survey p	oints				

1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

Swipe	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem	ovable Beta	Total Alpha
	Roof	0	36	18	16	Roof	3	24	18
2		6	48	36	17		Ö	-4	30
3		0	-12	36	18		3	60	36
4		3	40	36	19		0	16	-12
5		0	0	18	20	Roof	0	32	18
6		0	-24	18	21	Wall	ى ص	-20	-12
7		0	40	12	22		3	-28	-12
8		0	12	54	23		0	-52	6
9		0	0	0	24		6	12	12
10		0	24	30	25		0	-32	0
11		0	36	42	26		0	0	/8
12		3	-24	66	27		0	-8	48
13		0	4	30	28		0	4	-6
4		0	-40	36	29		0	4	0
15	Roof	3	-40	36	30	Wall	Ō	-12	-12

Date Reviewed 5 2 00 RS Supervision



SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002		Building 718 (ROOF/EXTERIOR)				
Survey Area: GG		Survey Unit N/A				
Initiator/ Date	Release Date	Validation Date	Closure Date			
J 10/25/99	9) 12/24/99	15m 5/15/00	EDM 5/15/00			

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	002	Building 718 (Re	OOF/EXT)	Type 1			
Survey Area GC		Survey Unit N/A		Area (m²) per building			
Survey Unit Desc	eription ROOF/EX	TERIOR OF BUIL	DING 718				
Survey Type			Classification				
RLC Survey X	FSS 🗆		Class 1 Class	2 □ Class 3 □ U	Jnknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
30	0	0	1	0	30		
Building		Туре		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type.			Classification				
RLC Survey □	FSS □			2 □ Class 3 □ U	Jnknown 🗆		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре•	Survey Area				
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type			Classification				
RLC Survey □	FSS 🗆		Class 1 Class	2 □ Class 3 □ U	Jnknown 🗆		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building. Type			Survey Area				
Survey Unit			Area (m²)				
Survey Unit Description							
Survey Type			Classification				
RLC Survey □	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown 🗆		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 718 (ROOF/EXTERIOR)				
Survey Area: GG	Survey Unit: N/A				
Survey Unit Description: Roof/exterior of Building	g 718				
Building Information:					
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey				
Building Type Type 1 X Type 2 Type 3					
Classification Class 1 Class 2 Class 3 Un	known X				
Contaminants of Concern Plutonium X Uranium X	Other 🗖				
Justification for Classification: N/A					
Special Support Requirements: Ladder, manlinstrumentation may be required for access into	· · · · · · · · · · · · · · · · · · ·				
Special Safety Precautions: Notify security persuch as platforms, roofs, or stairs. Access to roo controls. Review RWP/facility requirements an	fs/structures areas may require additional				
Isolation Controls:					
Level 1 🗆 Level 2 🗆 N/A X					
Labeling Requirements: NONE					
Survey Package Implementation: N/A					
	11/1/99				
	Date				
	N/A				
	Date 11/4/66				
	Date				
	Date				
	5/15/00				
	Date				
	N/A				
	Date				
	5/15/00				
	Date				

Package ID: 99-0002	Building: 718 (ROOF/EXTERIOR)
Survey Area: GG	Survey Unit. N/A

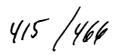
Survey Unit Description: ROOF/EXTERIOR OF BUILDING 718

Measurement	Number and Type	Comments
urface Activity	ROOF/EXTERIOR WALLS	SEE NOTE 1
leasurements	30 uniformly distributed survey points	SEE NOTE 2
	distributed as follows	SEE NOTE 3
	- 10 on walls (< 2 meters)	SEE NOTE 4
	- 20 on roof of Building 718	ę.
	FLOORS/WALLS < 2 meters N/A	,
	CEILINGS/WALLS > 2 meters N/A	
	EQUIPMENT N/A	
		}
	1	i i

	lding: 718 (ROOF/EXTERIOR)
Survey Area: GG Sur	vey Unit N/A

Survey Unit Description ROOF/EXTERIOR OF BUILDING 718

Minimum Survey/Sampling Measurement Requirements			
Measurement	Number and Type Comments		
Surface Scanning	ROOF/EXTERIOR WALLS	SEE NOTE 1	
	30 1 m ² surface scans shall be taken at each	SEE NOTE 2	
	location identified for surface activity measurements Locations found to be above the	SEE NOTE 3	
	DCGL will be noted	SEE NOTE 4	
	FLOORS/WALLS < 2 meters N/A		
	CEILINGS/WALLS > 2 meters N/A		
	EQUIPMENT N/A		
Media Samples	1 Sample from roof of Building 718		
•			
Volumetric Samples	NONE		
ampies			
sotopic Gamma	NONE		
cans			



Package	D : 99-0002	Building 718 (ROOF/EXTERIOR)
Survey A	Area: GG	Survey Unit. N/A

Survey Unit Description: ROOF/EXTERIOR OF BUILDING 718

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alphathen beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media."

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample.
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

	Building 718 (ROOF/EXTERIOR)		
Survey Area: GG	Survey Unit N/A		

Survey Unit Description: ROOF/EXTERIOR OF BUILDING 718

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

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- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
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Package ID: 99-0002	Building 707	
Survey Area: GG	Survey Unit N/A	
Survey Unit Description. ROOF/EXT	ERIOR OF BUILDING 718	
Sur	vev/Sampling Instructions	

SUPPLEMENTAL INSTRUCTIONS

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- Geographical direction (e g, indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
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 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc)

Package ID: 99-0002

Building 707

Survey Area: GG

Survey Unit N/A

Survey Unit Description: ROOF/EXTERIOR OF BUILDING 718

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected.
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SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID· 99-0002		Building 718 (ROOF/EXTERIOR)		
Survey Area:	GG	Survey Unit N/A		
Change #	Description		Initiator/ Date	PRE
1	Added page GA		9/ 12/21/99	ME.
2	Doleted per to direct	SEAL B' MEAS	1/1/2/19	1125 Maix
2	Replaced on 6 to dela	te spec. Breek	No olista	ALE V
3_		used of	Dr a/100	BE
4	Repland jake 9 w/ pages 9	through 9A	Kom 5/15/00	M3E
· · · · · · · · · · · · · · · · · · ·		··		
				
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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002 Building 718 (ROOF/EXTERIOR)					
Survey Area · GG	Survey Unit N/A				
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey □					
All Documentation Reviewed for Completion	RCT Supervisor	PRE			
Scan Surveys	/1//	EDW			
Total Activity Surveys	1100	Kouy			
Exposure Rate Surveys	NA	NA			
Removable Surveys	2	Lam			
Media Samples	NA (I)	NA			
Volumetric Samples	NA	NA			
All Surveys and Samples Accounted For	RCT Supervisor	PRE			
Scan Surveys		EOU			
Total Activity Surveys	6/1	KON			
Exposure Rate Surveys	NA	NA			
Removable Surveys	112	- pay			
Media Samples	NA	NA			
Volumetric Samples	NA	NA			
One meder sample, no paint at lecution identified in survey package					
		5-8-00 Date 5/15/60 Date 5/75/00 Date			

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I	NSTRUMENT DAT	A	antilianden en en en en en en en en en en en en e		
Mfg	Mfg		Survey Type:		
Model	Model	Model	Building		
Serial #	Serial #	Serial #	Location*		
Cal Due	Cal Due	Cal Due	Purpose		
Bkg	Bkg				
Efficiency	Efficiency	Efficiency	RWP#		
MDA	MDA	MDA	KWI #		
WIDN	WILL.		Date	Time	
Mfg	Mfg	Mfg			
Model	Model	Model	RCT	1	1
Serial #	Serial #	Serial #	Print name	Signature	Emp #
Cal Due		Cal Due			P "
Bkg	Bkg.	Bkg	RCT	1	1
Efficiency	Efficiency	Efficiency	Print name	Signature	Emp #
MDA	MDA	MDA		Ü	•
PRL#:					
REMOVABLE	REMOVABLE DIR	SURVEY R	ESULTS REMOVABLE REMOVABLE	DIRECT DIRI	ECT
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24		`	Alpha DPM/100 cm² DPM/100 cm² 26	Alpha Be DPM/100 cm ² DPM/1	
25			50		
Date Reviewed:	RS Sup	ervision:	nt Name	Signature	Emp #

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE

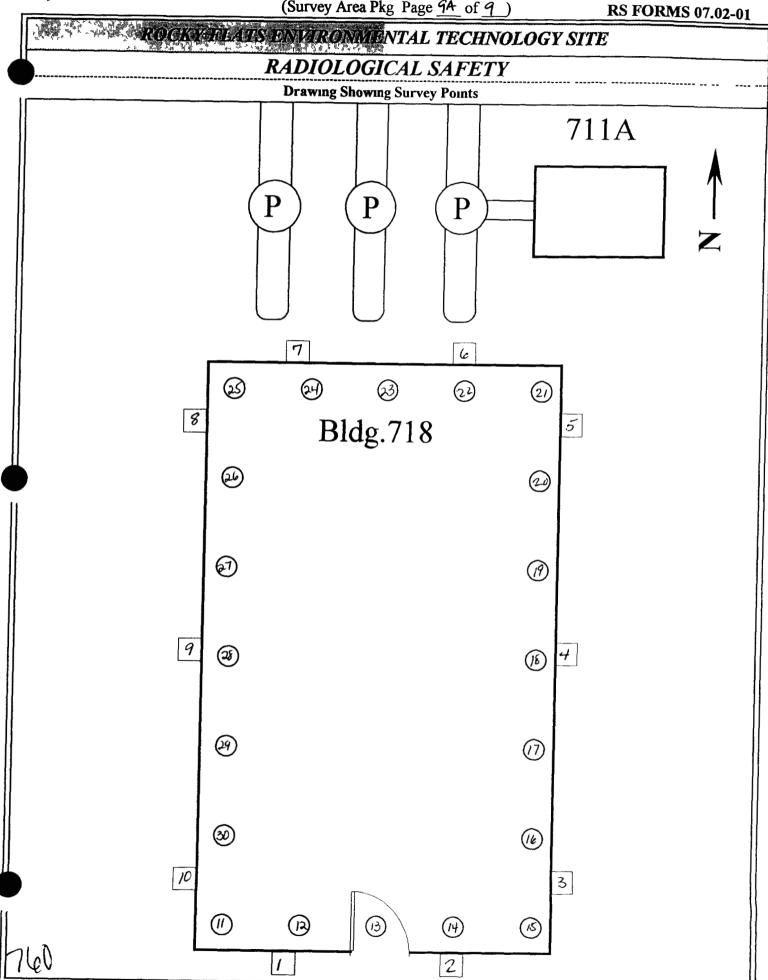
SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements.

	BROCK TOWN	SI MARKO MI	ENTAL TECHNOLOGY SITE
IN	STRUMENT DATA		
Mfg Eberline	Mfg Eberline /	Mfg NeTech	Survey Type Contamination
Model Sac-4	Model Sac-4	Model Electra	Building
Serial # <u>846</u>	Serial #	Serial # 1233	Location Roof/ExTEXION Survey Area 66
Cal Due <u>8-15-00</u>	Cal Due	Cal Due <u>5-//-00</u>	Purpose Reconnaisance Level Characterization
Bkg 0.5 0pm	Bkg	Bkg 30 cpm	
Efficiency 33%	Efficiency 33%	Efficiency .2063	RWP#
MDA 15,6 dpm	MDA /	MDA 94 dpm	Data 5-4-00 Time DAIIS
Mfg Eberline	Mfg Eberline /	Mfg	
Model BC-4	Model_BC-4	Model	
Serial # <u>959</u>	Serial #	Serial #	
Cal Due 7-19 00	Cal Due _//	Cal Due	
Bkg 42 cpm	Bkg	Bkg	
Efficiency 25%	Efficiency 25%	Efficiency	Print name / Signature / Emp +
MDA <u>/00 3 dpm</u>	MDA /	MDA /	
Comments Roof	Exterior Walls < 2	meters Unbiased	survey points
1 m ² scans, 1 mu	nute pats and swipe	s See map for lo	cations

SURVEY RESULTS

Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	EXTERIOR WALLS 124	0	8	36	16	ROOF	0	-24	96
2		3	28	6	_17		3	-20	120
3		0	-16	48	18		0	-36	138
4		3	60	36	19		0	-12	/32
_ 5		0	40	24	20		3	-20	150
6		3	12	30	21		3	-16	150
7		3	-4	42	22		9	-4	126
8		0	-20	12	23		0	12	180
9		3	-28	48	24		0	-8	120
10		0	-8	42	25		0	36	138
11	ROOF	6	-24	144	26		6	- 40	108
12		3	-20	126	27		0	-28	186
13		0	-24	186	28		0	-12	96
14		0	0	174	29		0	-20	84
15		0	-4/	156	30	*	3	8	90

Date Reviewed 5-8-00 RS Supervision
Print Name Signature Emp #



Rev 02/00

3/8/00

BUILDING 707
SURVEY PACKAGE: HH LOCATION: 707T

GAMMA GLANNER

ATTENTION:

THIS SURVEY PACKAGE WILL NOT BE PERFORMED PER DIRECTION FROM G. KELLY (CLOSURE PROJECTS) DUE TO **CHANGE IN SCOPE TO 707 COMPLEX CHARACTERIZATION** PROJECT.

SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002		Building 707T Survey Unit · N/A			
Survey Area: HH					
Initiator/ Date Release Date		Validation Date Closure D			
J 10/25/4	G 12/21/99				

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID. 99-0002 Bu		Building 707T		Type 1	
Survey Area: HH Survey Unit N/A		A Area (m^2) <2000			
Survey Unit Des	Survey Unit Description Interior of Building 707T (tomographic gamma scanner)				
Survey Type Classification					
RLC Survey X	FSS □		Class 1 Class	2 Class 3	Unknown X
Random/Uniform	Biased Surface	Equipment Surface	Media Samples	Volumetric	Surface Activity
Surface Activity Measurements	Activity Measurements	Activity Measurements		Samples	Scans
30	36	30	1	0	36
Building		Type·		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Des	cription		·		
Survey Type			Classification		
RLC Survey □	FSS □		Class 1 □ Class	2 □ Class 3 □ 1	Jnknown □
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Туре	Survey Area		
Survey Unit			Area (m²)		
Survey Unit Desc	cription				
Survey Type.			Classification		
RLC Survey □	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown 🗆
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Туре	Survey Area		
Survey Unit.			Area (m²)		
Survey Unit Description					
Survey Type.			Classification		
RLC Survey □ FSS □			Class 1 Class :	2 □ Class 3 □ U	Jnknown □
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

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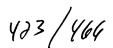
SURVEY PACKAGE COVER SHEET

Package ID: 99-0002		Building: 707T			
Survey Area: HH		Survey Unit: N/A			
Survey Unit Description: INTE SCANNER)	Survey Unit Description: INTERIOR OF BUILDING 707T (TOMOGRAPHIC GAMMA SCANNER)				
Building Information:					
Survey Type Reconnaissance Level	Characterizatio	n Survey X Final Status Survey			
Building Type Type 1 X Type 2	Type 3 □				
Classification Class 1 □ Class 2 □	l Class 3 □	Unknown X			
Contaminants of Concern Plutonium	X Uranium	X Other 🗖			
Justification for Classification:	N/A				
Special Support Requirements instrumentation may be required		•			
Special Safety Precautions: Ac buildings may require additional commencing surveys					
Isolation Controls:					
Level 1 Level 2 N/A X					
Labeling Requirements: NONE	3		. 40.		
Survey Package Implementation	n: N/A				
			11/5/99		
H			vie		
			[/A		
T.			ite		
			13/99		
<u> </u>			ite		
ate					
			/A		
<u> </u>			ite		
Process and the second	F1 "	DTCC M			
RESS Manager Printed Name	Employee #	RESS Manager Signature	Date		

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Package ID: 99-0002		Building 707T		
Survey Area: HH		Survey Unit N/A		
Survey Unit Desc	ription: Interior of Building 707T	(tomographic gamma scanner)		
	Mınımum Survey/Sampling N	leasurement Requirements		
Measurement	Number and Type	Comments		
Surface Activity Measurements	FLOORS/WALLS < 2 meters 30 unbiased survey points uniformly distributed building 707T 6 biased survey points near - Drum transport/movement/measuremeters - Source/material storage or staging are CEILINGS/WALLS > 2 meters 30 biased surveys as determined by RCT EQUIPMENT 30 biased survey points on equipment will building 707T as determined by RCT	SEE NOTE 3 SEE NOTE 4 nts areas		



Package ID: 99-0002 Build		Building 707T
Survey Area: HH	5	Survey Unit· N/A
Survey Unit Desc	ription: Interior of Building 707T (tomographic gamma scanner)
- 111 -	Mınımum Survey/Sampling M	easurement Requirements
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 36 1 m² surface scans shall be taken at ear location identified for surface activity measurements. Locations found to be ab DCGL will be noted CEILINGS/WALLS > 2 meters. NONE	SEE NOTE 3 SEE NOTE 4
Media Samples	Total of 1 biased (paint) media sample ta near transport or staging areas	*** Media sampling may not be possible in this area due to floor configuration/construction media Skip sample and document if sampling not feasible
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

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Package ID: 99-0002	Building 707T
Survey Area. HH	Survey Unit N/A
Survey Unit Description Interior of Building 7	07T (tomographic gamma scanner)

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4. Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample.
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-185-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

Package ID · 99-0002	Building 707T
Survey Area: HH	Survey Unit N/A
Survey Unit Description Interior of Building 707T	(tomographic gamma scanner)

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha
 then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to
 media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

Package ID: 99-0002	Building 707
Survey Area: HH	Survey Unit N/A
Survey Unit Description: . Interior of Building	g 707T (tomographic gamma scanner)
\ Survey/San	npling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area
- 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos.
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radion progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building 707
Survey Area. HH	Survey Unit N/A
Survey Unit Description Interior of	Building 707T (tomographic gamma scanner)
Su	rvey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4- Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e g, indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 99-0002 Building 707T				
Survey Area: HH		Survey Unit N/A		
Change #	Description		Initiator/ Date	PRE
/	Added page 6A Deleted pot to dient Replaced pg 6 to delete Replaced pg 64 w/		9/ 12/21/49	ME
2	Deleted pot to diexet	SCAL & MEAS	9 12/2/19	MASH
2	Replaced pg 6 to delete	spec. B meas	Dalista	ME
3	Raplaced of 64 w/	aevised of	Dro1/8/00	ATTE
· · · · · · · · · · · · · · · · · · ·		00		
	410000000000000000000000000000000000000			
:				

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002 Bu		Building 707T		
Survey Area: HH Su		Survey Unit. N/A		
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey □				
All Documentation Reviewed for Completion		RCT Supervisor		PRE
Scan Surveys				
Total Activity Surveys				
Exposure Rate Surveys				
Removable Surveys				
Media Samples				
Volumetric Samples				
All Surveys and Samples Accounted For		RCT Supervisor		PRE
Scan Surveys				
Total Activity Surveys				
Exposure Rate Surveys				
Removable Surveys				
Media Samples		M = 1		
Volumetric Samples				
Comments.			<u> </u>	· · · · · · · · · · · · · · · · · · ·
			_	
	RCT	Supervisor Signature		Date
	Projec	ct RE Signature	·	Date
	bree	Managar Cranatur-		D.
RESS Manager Printed Name Employee #	KE22	Manager Signature		Date

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II	NSTRUMENT	DATA		_			
lfg	Mfg	Mfg		Survey Ty	pe:		
lodel	Model		1	Building _			
erial #	Serial #	Serial	#				
al Due	Cal Due	Cal D	ue	Purpose			
kg	Bkg.						
fficiency	Efficiency	Effici	ency	RWP#			
DA	MDA			_			
				Date		Time	
lfg	Mfg	Mfg					
fodel	Model	Mode	1	RCT		/	1
erıal #	Serial #	Seria	#	P	rint name	Signat	ure Emp
al Due	Cal Due	Cal D	ue	-			- T
skg	Bkg.	Bkg		RCT		1	1
Efficiency					rint name	Signat	ure Emp
MDA	MDA		\	1			P
			SURVEY	RESULTS			
REMOVABLE Alpha	REMOVABLE Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha	REMOVABLE Beta	DIRECT Alpha	DIRECT Beta
			DIRECT	REMOVABLE Alpha DPM/100 cm ²	Beta DPM/100 cm ²		
Alpha	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27	Beta	Alpha	Beta
Alpha DPM/100 cm²	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	Beta DPM/100 cm ²	Alpha	Beta

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ENTAL PLOBENCHOGY SUBS

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE.

SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements.

3/8/00 BUILDING 707

SURVEY PACKAGE: II LOCATION: 7077 Exterior

ATTENTION:

THIS SURVEY PACKAGE WILL NOT BE PERFORMED PER DIRECTION FROM G. KELLY (CLOSURE PROJECTS) DUE TO CHANGE IN SCOPE TO 707 COMPLEX CHARACTERIZATION PROJECT.

SURVEY PACKAGE TRACKING FORM

Release Date	Survey Unit N/A Validation Date	Closure Date
Release Date	Validation Date	Closure Date
(A) 13/24/29		
		<u></u>

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	0002	Building 707T	T(ROOF/EXT) Type 1		
Survey Area II	ey Area II Survey Unit N/A		Area (m ²) per building		
Survey Unit Desc	eription ROOF/EX	TERIOR OF BUIL	DING 707T (TOM	OGRAPHIC GAM	MA SCANNER)
Survey Type			Classification		
RLC Survey X	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown X
Random/Uniform	Biased Surface	Equipment Surface	Media Samples	Volumetric	Surface Activity
Surface Activity Measurements	Activity Measurements	Activity Measurements		Samples	Scans
30	0	0	1	0	30
Building		Туре		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Desc	cription				
Survey Type		**************************************	Classification		
RLC Survey □	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown □
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building	-	Туре		Survey Area	
Survey Unit		-	Area (m²)		-
Survey Unit Desc	ription	· -			
Survey Type			Classification		
RLC Survey □	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown 🗆
Random/Uniform Surface Activity Measurements	Biased Surface Activity	Equipment Surface Activity	Media Samples	Volumetric	Surface Activity
	Measurements	Measurements		Samples	Scans
	Measurements	•		Samples	Scans
Building	Measurements	•		Samples Survey Area	Scans
Building Survey Unit	Measurements	Measurements	Area (m²)	•	Scans
		Measurements	Area (m²)	•	Scans
Survey Unit		Measurements	Area (m²) Classification	•	Scans
Survey Unit Desc		Measurements Type	Classification Class 1 □ Class	Survey Area 2 □ Class 3 □ U	Jnknown □
Survey Unit Desc Survey Type	cription	Measurements	Classification	Survey Area	

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SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707T (EXTERIOR/ROOF)				
Survey Area: II	Survey Unit· N/A				
Survey Unit Description: Roof/exterior of Building	g 707T (tomographic gamma scanner)				
Building Information:					
Survey Type Reconnaissance Level Characterization S	-				
Building Type Type 1 X Type 2 □ Type 3 □					
Classification Class 1 Class 2 Class 3 Un	nknown X				
Contaminants of Concern Plutonium X Uranium X	Other 🗆				
Justification for Classification: N/A					
Special Support Requirements: Ladder, manli instrumentation may be required for access into					
Special Safety Precautions: Notify security personnel prior to accessing elevated surfaces such as platforms, roofs, or stairs Access to roofs/structures areas may require additional controls Review RWP/facility requirements and surveys prior to entry					
Isolation Controls:					
Level 1 Level 2 N/A X					
Labeling Requirements: NONE					
Survey Package Implementation: N/A	1				
	111 11/5/99				
	Date				
	Ń/A				
	Date				
	11/5/99				
]	Date '				
	Date				
	N/A				
	Date				
RESS Manager Printed Name Employee # RESS	S Manager Signature Date				

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Package ID: 99-0002		Building 707T (ROOF/EXTERIOR)		
Survey Area: II Survey Unit Description: ROOF/EXTERIOR OF BUILDIN SCANNER)		Survey Unit: N/A		
		VILDING 707T (TOMOGRAPHIC GAMMA		
	Minimum Survey/Sampling	Measurement Requirements		
Measurement	Number and Type	Comments		
Surface Activity Measurements	ROOF/EXTERIOR WALLS 30 uniformly distributed survey points distributed as follows - 10 on walls (< 2 meters) - 20 on roof of Building 707T FLOORS/WALLS < 2 meters N/A CEILINGS/WALLS > 2 meters N/A EQUIPMENT N/A	SEE NOTE 3 SEE NOTE 4		

Package ID: 99-0	002	Building	707T	
Survey Area: II		Survey U	Juit N/A	
Survey Unit Desc SCANNER)	ription ROOF/EXTERIOR OF BUI	LDING 70°	TT (TOMOGRAPHIC GAMMA	
Mınımum Survey/Sampling Measurement Requirements				
Measurement	Number and Type		Comments	
Surface Scanning	ROOF/EXTERIOR WALLS 30 1 m ² surface scans shall be taken at location identified for surface activity measurements. Locations found to be DCGL will be noted		SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4	
	FLOORS/WALLS < 2 meters N/A CEILINGS/WALLS > 2 meters N/A EQUIPMENT N/A			
Media Samples	1 sample of roof media		***Configuration/structure of roof media may not permit media sample	
Volumetric Samples	NONE			
Isotopic Gamma Scans	NONE			

Package IQ: 99-0002	Building 707T
Survey Area II	Survey Unit N/A
Survey Unit Description: ROOF/EXTERIOR OF BUSCANNER)	JILDING 707T (TOMOGRAPHIC GAMMA
\ Survey/Samplı	ng Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample.
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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Package ID: 99-0002	Building 707T
Survey Area: II	Survey Unit N/A
Survey Unit Description: ROOF/EXTERIOR OF BU	JILDING 707T (TOMOGRAPHIC GAMMA

Survey/Sampling Instructions

NOTE 1. Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination

SCANNER)

- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- <u>Following each media sample</u>, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, *Contamination Monitoring Requirements*

Package ID: 99-0002	Building 707
Survey Area: II	Survey Unit N/A
Survey Unit Description SCANNER)	: ROOF/EXTERIOR OF BUILDING 707T (TOMOGRAPHIC GAMMA
	Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos.
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta-contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building 707
Survey Area: II	Survey Unit N/A

Survey Unit Description: • ROOF/EXTERIOR OF BUILDING 707T (TOMOGRAPHIC GAMMA SCANNER)

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected
- Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4- Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- Oue to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e g, indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 9	ackage ID: 99-0002 Building. 707T (ROOF/EXTERIOR)		IOR)	
Survey Area:	II Survey Unit · N/A		·	
Change #	Description		Initiator/ Date	PRE
/	Added page 6A		9/ 12/21/99	MDE IN
2	Deleted por to direct	SAN B- MOAS	10/2/49	11 / W/18
2	Replaced of 6 to delete ;	pec. 18 mens.	97 0/18/00	MIZE
3		Revised Ra	10x01/18/00	ME
		90		

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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	ding 707T (ROOF/EXTERIOR)			
Survey Area: II	urvey Unit: N/A			
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey □				
All Documentation Reviewed for Completion		RCT Supervisor		PRE
Scan Surveys				
Total Activity Surveys				
Exposure Rate Surveys				
Removable Surveys				
Media Samples				
Volumetric Samples			• • •	
All Surveys and Samples Accounted For		RCT Supervisor		PRE
Scan Surveys				
Total Activity Surveys				
Exposure Rate Surveys				
Removable Surveys				
Media Samples				
Volumetric Samples				
Comments				
			*	
	200			
	KCT	Supervisor Signature		Date
	Proje	ct RE Signature		Date
	RESS	Manager Signature		Date

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	ROWN TO BEING	1. Natur Actua <mark>l 20</mark>	DNULZGI, TUD	(CHENOXI(O)	car simp	
INSTRUMENT DATA						
Mfg	Mfg.	Mfg	Survey Ty	De:		
Model	Model	Model				
Serial #	Serial #	Serial #				
Cal Due	Cal Due	Cal Due				
Bkg			-			
Efficiency	Efficiency	Efficiency	- _{RWP #}			
MDA		MDA	- ^``' -			
	, 1410/11		- Date		Time	
Mfg	Mfg	Mfg				
Model	Model	Model	- RCT		1	1
Serial #	Serial #	Serial #		Print name	Signat	ure Emp#
Cal Due	Cal Due		-			
Bkg		Bkg	- RCT		1	1
Efficiency	Efficiency	Efficiency		Print name	Signat	ure Emp#
MDA	MDA	MDA	-	******	- -0	
REMOVABLE Alpha DPM/100 cm²	Beta Air	ECT DIRECT pha Beta 100 cm ² DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm ²	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
1			26			
2			27			
3 4			28 29			
5			30			
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9 10			34 35			
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15		•	40			
16 17			41			
18			43			
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20			45			
21		•	46			
22			47			
23			48		-	
25			50			
	- 					
Date Reviewed:_	RS Supe	ervision:	rınt Name		Signature	/ Emp #

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BUNGLAL JUNCHINOLOGY SQ

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

AREA SPECIFIC SURVEY MAPS NOT AVAILABLE.

SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements.

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SURVEY PACKAGE TRACKING FORM

ackage ID: 99-0002		Building 731 (EXTERIOR/ROOF)			
Survey Area: JJ		Survey Unit· N/A			
Initiator/ Date	Release Date	Validation Date	Closure Date		
A 10/25/19	M 12/21/99	159M 5/15/00			

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	0002	Building: 731		Type 2		
Survey Area JJ		Survey Unit N/A		Area (m²) per building		
Survey Unit Description ROOF/EXTERIOR OF BUIL			DING 731	· · · · · · · · · · · · · · · · · · ·		
Survey Type.		Classification				
RLC Survey X	FSS □		Class 1 Class	2 □ Class 3 □ Unknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
30	5	0	1	0	35	
Building		Туре		Survey Area		
Survey Unit			Area (m²)			
Survey Unit Desc	eription					
Survey Type			Classification			
RLC Survey □	FSS □		Class I 🔲 Class	2 ☐ Class 3 ☐ Unknown ☐		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building	 	Туре		Survey Area		
Survey Unit	·	Area (m²)				
Survey Unit Description						
Survey Type	urvey Type Classification					
RLC Survey	FSS □	Class 1 □ Class		2 □ Class 3 □ Unknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
:						
Building.		Туре		Survey Area		
Survey Unit		Area (m²)				
Survey Unit Description						
Survey Type	rpe Classification					
RLC Survey □	FSS 🗆		Class 1 Class :	s 2 🗆 Class 3 🗆 Unknown 🗆		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building. 731 (EXTERIOR/ROOF)		
Survey Area: JJ Survey Unit: N/A			
Survey Unit Description: Roof of Building 731			
Building Information:			
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey		
Building Type Type 1 □ Type 2 X Type 3 □			
Classification Class 1 🗆 Class 2 🗀 Class 3 🗖 Ur	ıknown X		
Contaminants of Concern Plutonium X Uranium X (Other 🗆		
Justification for Classification: N/A			
Special Support Requirements: Ladder, manlinstrumentation may be required for access into	- 1		
Special Safety Precautions: Notify security persuch as platforms, roofs, or stairs. Access to roo controls. Review RWP/facility requirements and	fs/structures areas may require additional		
Isolation Controls:			
Level 1 🗖 Level 2 🗖 N/A X			
Labeling Requirements: NONE			
Survey Package Implementation: N/A			
	11/5/95 Onte N/A		
	11/5/99		
Date			
	5/15/00		
Oate N/A			
Date			
	5/5/w		
	Jare /		

Package ID: 99-0002	Building: 731 (EXTERIOR/ROOF)		
Survey Area: JJ	Survey Unit · N/A		

Survey Unit Description: ROOF/EXTERIOR OF BUILDING 731

Minimum Survey/Sampling Measurement Requirements			
Measurement	Number and Type	Comments	
irface Activity	ROOF/EXTERIOR WALLS	SEE NOTE 1	
easurements	30 uniformly distributed survey points distributed as follows	SEE NOTE 2	
	- 10 on walls (< 2 meters)	SEE NOTE 4	
	- 20 on roof of Building 731	SEE NOTE 4	
	5 biased survey points around piping/ventilation penetrations of as determined by RCT		
	FLOORS/WALLS < 2 meters N/A		
	CEILINGS/WALLS > 2 meters N/A		
	EQUIPMENT N/A		
		•	

Package ID: 99-0002 Buildin		g 731 (EXTERIOR/ROOF)			
Survey Area: JJ Surve		Survey U	Unit N/A		
Survey Unit Desc	ription ROOF/EXTERIOR OF BUI	LDING 73	1		
	Minimum Survey/Sampling	Measuren	nent Requirements		
Measurement	Number and Type		Comments		
Surface Scanning	ROOF/EXTERIOR WALLS 35 1 m² surface scans shall be taken at location identified for surface activity measurements. Locations found to be a DCGL will be noted FLOORS/WALLS < 2 meters. N/A CEILINGS/WALLS > 2 meters. N/A EQUIPMENT. N/A	above the	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4		
Media Samples	1 media sample from roof		***Due to configuration/structure of roof, media sampling may not be possible		
Volumetric Samples	NONE				
Isotopic Gamma Scans	NONE				

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SURVEY PACKAGE SURVEY SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 99-0002	Building 731 (EXTERIOR/ROOF)
Survey Area: JJ	Survey Unit N/A
Survey Unit Description: ROOF/EXTERIOR OF BU	JILDING 731

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample.
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO 165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239 Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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Package ID: 99-0002	Building 731 (EXTERIOR/ROOF)		
Survey Area: JJ	Survey Unit. N/A		
C II A D A A DOOR TO THE DOOR OF DAILY DDIOG 721			

Survey Unit Description: ROOF/EXTERIOR OF BUILDING 731

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling
 If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting
 the media sample
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02. Contamination Monitoring Requirements

Package ID. 99-0002	Building 707
Survey Area· JJ	Survey Unit N/A
Survey Unit Description: : RO	OF/EXTERIOR OF BUILDING 731
	Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radion progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e g, indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = cerlings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building 707				
Survey Area: JJ Survey Unit N/A					
Survey Unit Description: ROOF/E.	CTERIOR OF BUILDING 731				
Survey/Sampling Instructions					

SUPPLEMENTAL INSTRUCTIONS

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected.
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radion progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well
- Oue to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 9	99-0002	Building: 731 (EXTERIOR/ROOF)					
Survey Area:	JJ	Survey Unit. N/A					
Change #	Description		Initiator/ Date	PRE			
/	Added page 6A		0/ 12/21/19	MA			
2	Delated Ret to diani	SCAN B MAS	97 10/2/19	MIL			
2	Replaced pg 6 to datele	spec B'ness	Mojisto	MA			
3	Replaced on GR w/Re	competit surrey	On01/18/00	905E			
4	Roblaced Page of With new whaps of atta on Pages of Human 90	completed survey	(Eou / 4/20/00	J-			
	0 0						
·							

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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Building 731 (EXTER	IOR/ROOF)			
Survey Area: JJ	Survey Unit N/A	urvey Unit N/A			
Survey Type Reconnaissance Level Characterization Survey X Final Status Survey □					
All Documentation Reviewed for Completion	RCT Supervisor	PRE			
Scan Surveys		d-			
Total Activity Surveys	1	do			
Exposure Rate Surveys	NA	NA			
Removable Surveys	1	do			
Media Samples	NA ⁽ⁱ⁾	NA [©]			
Volumetric Samples	NA	NA			
All Surveys and Samples Accounted For	RCT Supervisor	PRE			
Scan Surveys	1	do			
Total Activity Surveys	1	d)-			
Exposure Rate Surveys	NA	NA			
Removable Surveys	8	do-			
Media Samples	NA O	NAD			
Volumetric Samples	NA	NA			
Ono media sangles taken, no junt at l	lizations identified in	survey package			
		5-2-00 Date 5/15/00			
RESS Manager Printed Name Employee #	RESS Manager Signature	3/15/W Date			

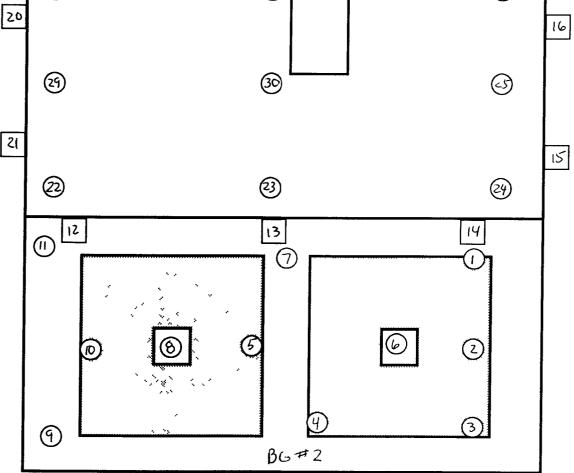
	KANALA	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	THE PHYLLE	N#1201, 111	CENNOZI,ŌX	G17 \$717 12		
<u> </u>	NSTRUMENT	DATA			dunicalita limo de cuero, communica			
Mrg	Mfg			Survey Ty	me:			
Model	Model	Model		Survey Type:				
Serial #	Serial #	Serial #		Location*				
Cal Due	Cal Due	Cal Du	e					
Bkg.	Bkg			-				
Efficiency	Efficiency		ncy	RWP#				
MDA	MDA				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
\				Date		Time		
Mfg	Mfg	Mfg						
Model	Model	Model		RCT		/		
Serıal #	Serial #	Serial #	f		Print name	Signati	ıre Emp#	
Cal Due	Cal Due	Cal Du	e			•	•	
Bkg	Bkg			RCT		/	/	
Efficiency	Efficiency	Efficie	ncy	1	Print name	Signati	ıre Emp#	
MDA	MDA	MDA_				_	_	
PRL#:								
		į	SURVEY R	ESULTS				
REMOVABLE Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm² I	Beta DPM/100 cm²	REMOVABLE Alpha DPM/100 cm² 26. 27 28 29 30 31 32 33 34 35 36 37 38 39 39 41 42 42 43 44 45 46 47	REMOVABLE Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm²	
23 24 25				48 49 50				
Date Reviewed:	R	S Supervision:		t Name		Signature	/ Emp #	

Q0D

RADIOLOGICAL SAFETY Drawing Showing Survey Points AREA SPECIFIC SURVEY MAPS NOT AVAILABLE SURVEY MAP TO BE GENERATED AT TIME OF SURVEY IN ACCORDANCE WITH 3-PRO-165-RSP-07.02, Contamination Monitoring Requirements.

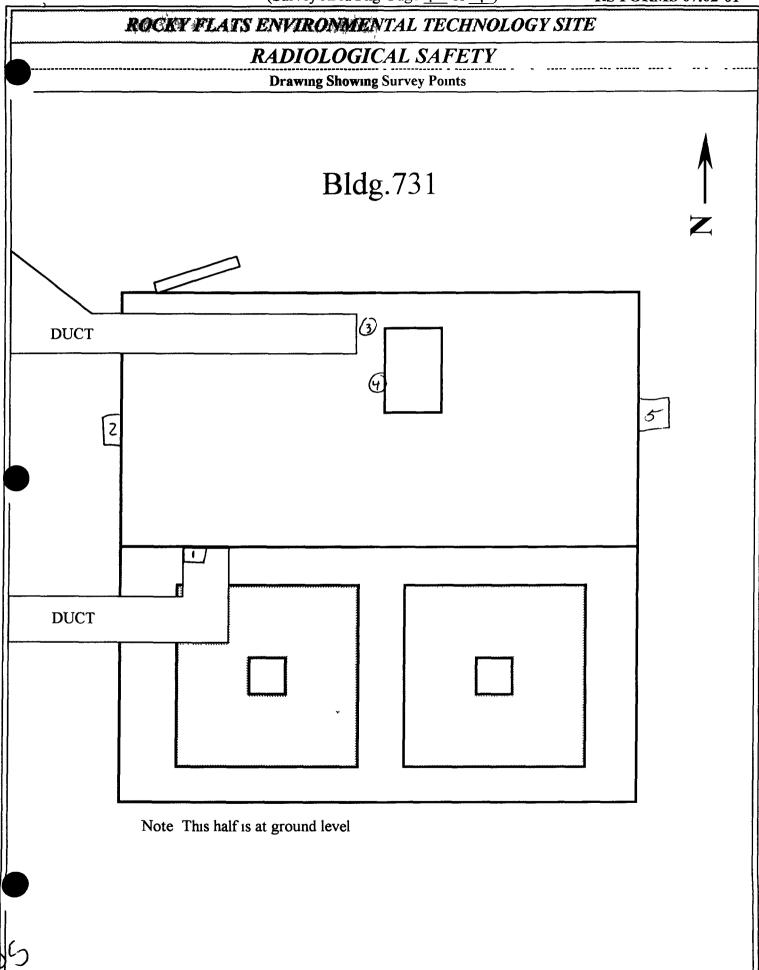
* 5 ₄ 1	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE									
		STRUMENT DA								
	Eberline	Mfg Eberline		fg <u>Ne'l</u>			vey Type Contamination	1		
22	lel Sac-4	Model Sac-4	_	odel Elec		Build	<u> </u>			
9.6	al # 846	Serial # 1270	-	rial #_\			tion Roof - Wall ose Reconnaisance Level		ey Are	
	Due <u>8-15-∞</u> 60 cpm	Cal Due 4 /2-00	_	1 Due <u>5</u>		Purp	ose Reconnaisance Level	Charac	terizat	1011
88	ciency 33%	Bkg <u>0.2 cpm</u> Efficiency 33%	_	g 2.c		RW	P#			
	A 8 2 0 Pm	MDA 12 9 0Pm	_	DA 94						
ll .						Date	$e = \frac{4-7-00}{\text{Time}}$	120	0	
Mfg	BC-4	Mfg Eberline	_ Mf		-/					
11	al # 872	Model <u>BC-4</u> Serial # <u>833</u>	-	odel	1/2					
	Due 4-12-00	Cal Due 7-14-00	_ Sci	l Due	// ^					
21	38 cm	Bkg <u>43 cpm</u>		/—						
	ciency 25%			iciency		RCT	Print name / Signatu		/ E	
	A 95,9 OPM	MDA 101 3 DP					Fint name / Signatu	.10	/ Em	p #
Com	ments Roof	/ Exterior Walls		ters L	Jnbiase	d surv	ey points		,	
		inute pats and sw								
	2 - backgrau	nds #1(1cpn	<u> ナ</u>	2 (4 c	pm)					
<u></u>				<u>SU</u>	RVEY	RESU!	LTS			
Swipe	Location\Desc	nption		ovable	Total	Swipe	Location\Description		ovable	Total
#	(Results in DPM	/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
\perp 1	Roof		3	44	150	16	Wall	0	4	138
2	Root		0	-40	108	17	Wali	3	16	42
3	Roof		3	64	66	18	Wall	0	-58	66
4	Roof		0	36	42	19	Wall	0	40	84
5	Roof		0	44	102	20	Wall	0	-(2	٦8
6	Roof		9	-28	66	21	Wall	0	0	42
7	Roof		0	-12	90	22	R∞f	0	-16	180
8	Roof		0	24	120	23	Roof	0	-44	216
9	Roof		0	٥	78	24	Roof	3	12	138
10	Roof		0	56	132	25	Roof	0	16	48
11	Roof		6	40	48	26	Roof	0	0	144
12	Wall		0	12	72	27	Roof	0	-16	132
13	wall		0	40	42	28	Rocf	0	40	96
4	Wall		0	28	66	29	Roof	0	32	114
15	Wall		0	20	18	30	Roof	0	12	66
Date	Reviewed	4 17 00 RS SI	ıpervis	ion						_

(Survey Area Pkg Page 9A of 9) RS FORMS 07.02-01 RADIOLOGICAL SAFETY Drawing Showing Survey Points Bldg.731



Note This half is at ground level

	ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE											
5	INSTRUMENT DATA							Conton	ination			
_	Eberline	Mfg Eberline		g <u>NeT</u>			<u> </u>	Contain	nination		<u>-</u>	
	lel <u>Sac-4</u> al # <u>846</u>	Model Sac-4 Serial # 1270	-	del <u>Elec</u> 1al# 13		Build		/wall		Surv	ey Area	3 J.T
		Cal Due 4-12-00				1	ose Recon	naisance	e Level C			
31	0 0 cpm	Bkg O.Z.cpm		g 2 0		1 taip	030					
**	ciency 33%	Efficiency 33%		iciency2		RW	'P#					
II	4 8.2 ppm	MDA 12.9 DAM)A <u> </u>			e <u>4-</u> 7-00)	Time	150	၁ဝ	
Mfg		Mfg Eberline	Mf	g								
21	lelBC-4_	Model BC-4			/							
48	al # <u>872</u>	Serial # 833		ıal #	1/1							
46		Cal Due 7-14-00 Bkg 55-43-43cq		Due _/	7-							
	38 cpm ciency 25%	Efficiency 25%		iciency_		RCT	Γ				/ E	
		MDA 1013 DPA					Print nan	ne /	Signatui	re	/ Emp) #
		/ Exterior Walls		d surve	y point	S						
1	m ² scans, 1 mi	nute pats and swi	pes	See ma	p for lo	ocation	ns					
li												
<u> </u>												
 	SURVI				RVEY	RESU.	LIS			<u> </u>		γ
LSwipe #	Location\Desci (Results in DPM/	nption 100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Det (Results in DPI			Remo	ovable Beta	Total Alpha
	under d	uct	0	-20	24	16						
2	Elect con	nduit	0	-12	60	17						
3	duct		6	29	60	18						
4	vent		0	-50	36	19		Value .				
5	Elect C	onduit	3	12	30	20						
6	END O	F SURVEY		``		21						
7						22					_	
8						23		5 · · · · ·	N/A			
9						24					_	
10		NA				25					_	
11	· · · · · · · · · · · · · · · · · · ·					26						
12						27						
13						28						
4						29	/		· · · · · · · · · · · · · · · · · · ·			
5						20	<i>Y</i>					
Date	Reviewed 4	1-17 00 RS Su	ipervis	ion.								



3/8/00
BUILDING 707
SURVEY PACKAGE: KK LOCATION: W-007/-008
INTERIOR

ATTENTION:
THIS SURVEY PACKAGE WILL NOT BE PERFORMED PER
DIRECTION FROM G. KELLY (CLOSURE PROJECTS) DUE TO
CHANGE IN SCOPE TO 707 COMPLEX CHARACTERIZATION
PROJECT.

SURVEY PACKAGE TRACKING FORM

Package ID. 99-0002		Building 707 VALVE VAULTS (INTERIOR)				
Survey Area: KK		Survey Unit: N/A				
Initiator/ Date	Release Date	Validation Date	Closure Date			
CAN 11/12/99	Got 12/21/99					
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						
			1			

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	0002	Building 707 (V	(V-007/VV-008)				
Survey Area KK		Survey Unit N/A	Area (m ²) 9				
Survey Unit Desc BUILDING 707		OR OF VALVE \	AULTS VV-007	AND VV-008 W	EST OF		
Survey Type			Classification				
RLC Survey X	FSS □		Class 1 Class	Class 1 □ Class 2 □ Class 3 □ Unknown			
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
32	40	30	2	0	42		
Building		Туре	Survey Area				
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type		_	Classification				
RLC Survey □	RLC Survey FSS			2 □ Class 3 □ U	Jnknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре	Survey Area				
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type			Classification				
RLC Survey □	FSS □		Class 1 □ Class 2 □ Class 3 □ Unknown □				
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Desc	cription						
Survey Type			Classification	<u> </u>			
RLC Survey □	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown 🗆		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		

SURVEY PACKAGE COVER SHEET

Package ID: 99-0002	Building: 707 VALVE VAULTS (INTERIOR)				
Survey Area: KK Survey Unit: N/A					
Survey Unit Description: INTERIOR OF VALVE BUILDING 707	YE VAULTS VV-007 AND VV-008 WEST OF				
Building Information:					
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey 🗆				
Building Type Type 1 □ Type 2 □ Type 3 X					
Classification Class 1 Class 2 Class 3 Ui					
Contaminants of Concern Plutonium X Uranium X C	Other 🗆				
Justification for Classification: N/A					
Special Support Requirements: Ladder, mani- instrumentation may be required for access into	<u>.</u>				
Special Safety Precautions: Access to roofs/st controls, and/or security requirements Make a surveys on roofs or similar structures Review					
Isolation Controls:					
Level 1 🗆 Level 2 🗅 N/A X					
Labeling Requirements: NONE					
Survey Package Implementation:					

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Package ID. 99-0	002 B	Building 707 VALVE VAULTS (INTERIOR)		
Survey Area: KK	S	Survey Unit N/A		
Survey Unit Desc BUILDING 707	ription. INTERIOR OF VALVE V	AULTS VV-007 AND VV-008 WEST OF		
	Minimum Survey/Sampling Mo	easurement Requirements		
Measurement	Number and Type	Comments		
Surface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1		
Measurements	32 <u>unbiased</u> survey points uniformly districted on the interior of <u>each valve vault structure</u> follows			
	- 3 survey points per wall per valve va	see NOTE 4		
	- 4 survey points per floor per valve va			
	10 biased survey points (5 per valve vault emphasis on the following types of location			
	- Areas of contained contamination or historical spills			
	- Other areas of potential concern base RCT/RE judgement/experience	ed on		
	CEILINGS/WALLS > 2 meters			
	30 <u>biased</u> surveys (15 points per valve valve with focus on following areas	ult)		
	- 3 points per wall per valve vault			
	- 3 points per valve vault ceiling			
	- Walls/ceilings behind/above process	lines		
	- Stained, discolored, or suspect areas			
	- Areas around pipe or other penetration	ons		
		1		

Package ID: 99-0	002 I	Building 707 VALVE VAULTS (INTERIOR		
Survey Area: KK	S	Survey Unit N/A		
Survey Unit Desc BUILDING 707		AULTS VV-007 AND VV-008 WEST OF		
Measurement	Minimum Survey/Sampling M Number and Type	Comments		
Surface Activity Measurements (continued)	EQUIPMENT 30 biased survey points (15 per valve value equipment within the valve vaults with for the following areas - Tanks/pumps/piping associated with process waste/liquid lines - On top of overhead piping (where lare accessible/available - Other areas of potential concern bas RCT judgement/experience	ocations		
Surface Scanning	FLOORS/WALLS < 2 meters 42 1 m² surface scans shall be taken at ea location identified for surface activity measurements including exterior and intesurvey points. Locations found above the shall be documented CEILINGS/WALLS > 2 meters. NON	SEE NOTE 3 SEE NOTE 4		

SEE NOTE 5

** media samples may not be possible in this

those media samples which are not possible

area due to configuration of floor structure Skip

EQUIPMENT NONE

NONE

NONE

Total of 2 biased paint samples taken as follows

Within each valve vault on the floor or as

designated by Radiological Engineering

Media Samples

Volumetric

Isotopic Gamma

Samples

Scans

Package ID: 99-0002	Building 707 VALVE VAULTS (INTERIOR)
Survey Area KK	Survey Unit N/A
Survey Unit Description: INTERIOR OF VALVE BUILDING 707	VAULTS VV-007 AND VV-008 WEST OF

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media."

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements



Package ID. 99-0002	Building 707 VALVE VAULTS (INTERIOR)
Survey Area. KK	Survey Unit· N/A
	THE THE THE TAX AND A STATE OF THE TAX AND A

Survey Unit Description: INTERIOR OF VALVE VAULTS VV-007 AND VV-008 WEST OF BUILDING 707

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

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- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

Package ID: 99-0002	Building: 707
Survey Area: KK	Survey Unit N/A
Survey Unit Decomption - INTEDIOD OF V	ALVE VALIETS VV 007 AND VV 008 WEST OF

Survey Unit Description: : INTERIOR OF VALVE VAULTS VV-007 AND VV-008 WEST OF

BUILDING 707

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002

Survey Area · KK

Survey Unit N/A

Survey Unit Description. : INTERIOR OF VALVE VAULTS VV-007 AND VV-008 WEST OF BUILDING 707

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
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- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)



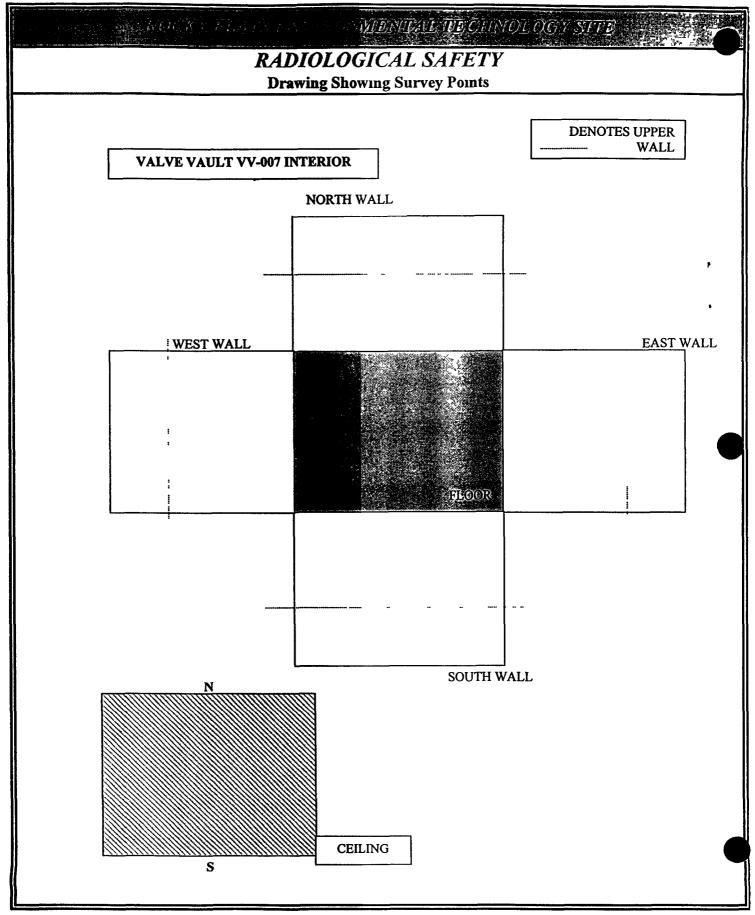
SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID · 9	9-0002	Building 707 VA	LVE VAULTS (INTERIOR)
Survey Area:	KK	Survey Unit N/A		
Change #	Description		Initiator/ Date	PRE
1	Added page 6A Deleted per to de Replaced pg 6 to de Replaced pg 6A r/ne		8/ 12/2/19	ME
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SURVEY PACKAGE VALIDATION CHECKLIST FORM

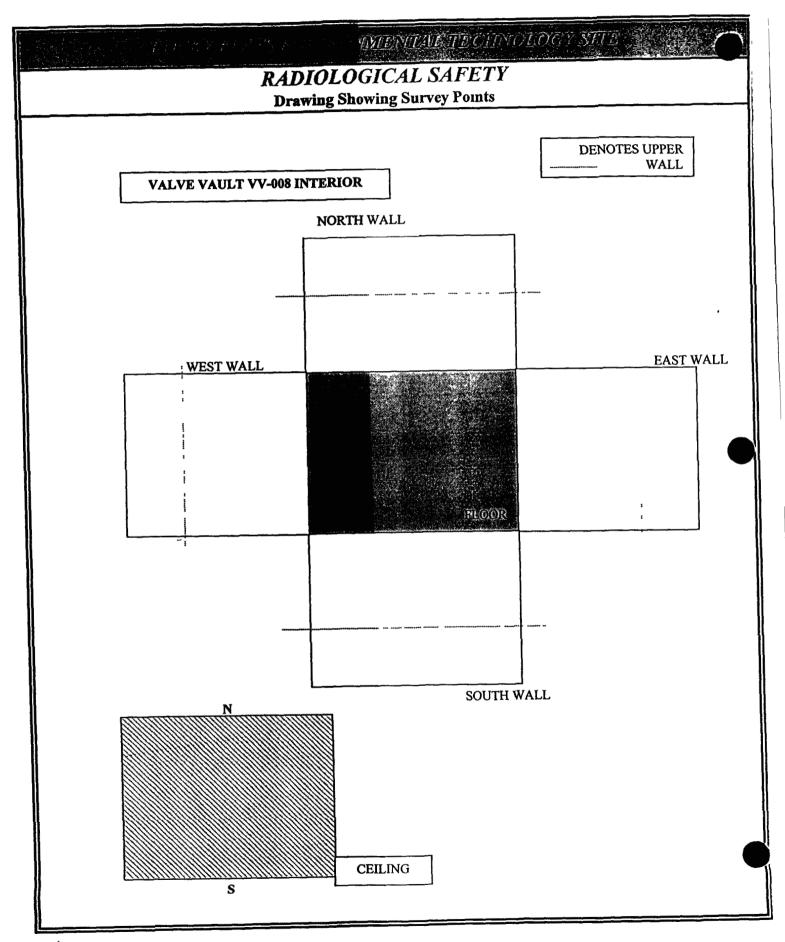
Package ID. 99-0002 Building 707 VALVE VAULTS (INTE				INTERIOR)	
Survey Area: KK		Su	urvey Unit N/A		
Survey Type: Reconnaissance Level (Characterization S	Surve	ey X Final Status Surve	:y 🗆	
All Documentation Reviewed for Con	pletion		RCT Supervisor		PRE
Scan Surveys					
Total Activity Surveys					· , <u>, , , , , , , , , , , , , , , , , ,</u>
Exposure Rate Surveys					——————————————————————————————————————
Removable Surveys					
Media Samples					
Volumetric Samples					
All Surveys and Samples Accounted I	For		RCT Supervisor		PRE
Scan Surveys					
Total Activity Surveys					
Exposure Rate Surveys					
Removable Surveys					<u> </u>
Media Samples					
Volumetric Samples					
Comments	-	·			
RCT Supervisor Printed Name	Employee #	RCT	Supervisor Signature		Date
		Projec	et RE Signature		Date
ALOO Manager Frince Name	Emproyee #	RESS	Manager Signature		Date

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Bkg Efficiency	Efficiency		ency	RWP#			
MDA							
WDA				Date		Time	
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Date Reviewed:	R	S Supervisio		ınt Name		Signature	/ Emp. #



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				Date.		Time:	
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Date Reviewed:_	K	S Supervisio		rint Name		Signature	/ Emp #



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BUILDING 707	VAIVE VALITY	اسدا
SURVEY PACKAGE: LOCATION: 1	VAIUE VAUITS	8
ATTENTION:	EXTERIOR	_

THIS SURVEY PACKAGE WILL NOT BE PERFORMED PER DIRECTION FROM G. KELLY (CLOSURE PROJECTS) DUE TO CHANGE IN SCOPE TO 707 COMPLEX CHARACTERIZATION 'ROJECT.



SURVEY PACKAGE TRACKING FORM

Package ID: 99-0002		Building 707 VALVE VAULTS (EXTERIOR/ROOF)			
Survey Area: LL		Survey Unit N/A			
Initiator/ Date	Release Date	Validation Date	Closure Date		
M 11/2/19	9 12/2/99				

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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 99-0	0002	Building 707 VAL	ALVE VAULTS (EXT) Type 3		
Survey Area LL		Survey Unit N/A	1	Area (m²) 9	
Survey Unit Desc WEST OF BUII		AND EXTERIOR	OF VALVE VAU	JLTS VV-007 AN	ID VV-008,
Survey Type			Classification		
RLC Survey X	FSS □		Class 1 Class	2 □ Class 3 □ U	Jnknown X
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
32	0	0	0	2	32
Building		Туре		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Desc	cription				
Survey Type			Classification		
RLC Survey □	FSS 🗆		Class 1 Class	Jnknown 🗆	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Туре		Survey Area	
Building Survey Unit		Туре	Area (m²)	Survey Area	
	cription.	Type·	Area (m²)	Survey Area	
Survey Unit	cription.	Type	Area (m²) Classification	Survey Area	
Survey Unit Desc	FSS 🗆	Type·			Jnknown □
Survey Unit Survey Unit Desc		Type· Equipment Surface Activity Measurements	Classification		Jnknown □ Surface Activity Scans
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface Activity	Classification Class 1 □ Class	2 □ Class 3 □ U Volumetric	Surface Activity
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface Activity	Classification Class 1 □ Class	2 □ Class 3 □ U Volumetric	Surface Activity
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements	FSS Biased Surface Activity	Equipment Surface Activity Measurements	Classification Class 1 □ Class	2 □ Class 3 □ U Volumetric Samples	Surface Activity
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Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description	FSS Bussed Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 □ Class Media Samples Area (m²)	2 Class 3 U Volumetric Samples Survey Area	Surface Activity
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description Survey Type	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples Area (m²)	2 Class 3 U Volumetric Samples Survey Area	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Survey Unit Description: ROOF AND EXTERIOR OF VALVE VAULTS VV-007 AND VV-008, WEST OF BUILDING 707 Building Information: Survey Type Reconnaissance Level Characterization Survey X Final Status Survey Description: Putonium X Uranium X Other Description: Distribution of Concern Plutonium X Uranium X Other Description: N/A Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas — use caution in overheads Special Safety Precautions: Access to roofs/structures may require additional safety measure, controls, and/or security requirements Make appropriate notifications prior to commencing surveys on roofs or similar structures Review RWP requirements and surveys prior to entry Isolation Controls: Level 1 Devel 2 N/A X Labeling Requirements: NONE Survey Package Implementation:	Package ID: 99-0002	Building: 707 VALVE VAULTS (EXTERIOR/ROOF)	
Building Information: Survey Type Reconnaissance Level Characterization Survey X Final Status Survey Building Type Type 1 Type 2 Type 3 X Classification Class 1 Class 2 Class 3 Unknown X Contaminants of Concern Plutonium X Uranium X Other Justification for Classification: N/A Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas — use caution in overheads Special Safety Precautions: Access to roofs/structures may require additional safety measure, controls, and/or security requirements Make appropriate notifications prior to commencing surveys on roofs or similar structures Review RWP requirements and surveys prior to entry Isolation Controls: Level 1 Level 2 N/A X Labeling Requirements: NONE Survey Package Implementation:	Survey Area: LL	Survey Unit N/A	
Survey Type Reconnaissance Level Characterization Survey X Final Status Survey Building Type Type 1 Drype 2 Drype 3 X Classification Class 1 Drype 2 Drype 3 X Contaminants of Concern Plutonium X Uranium X Other Drype 3 X Contaminants of Concern Plutonium X Uranium X Other Drype 3 X Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas — use caution in overheads Special Safety Precautions: Access to roofs/structures may require additional safety measure, controls, and/or security requirements Make appropriate notifications prior to commencing surveys on roofs or similar structures Review RWP requirements and surveys prior to entry Isolation Controls: Level 1 Devel 2 N/A X Labeling Requirements: NONE Survey Package Implementation:			
Building Type Type 1 Type 2 Type 3 X Classification Class 1 Class 2 Class 3 Unknown X Contaminants of Concern Plutonium X Uranium X Other Justification for Classification: N/A Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas — use caution in overheads Special Safety Precautions: Access to roofs/structures may require additional safety measure, controls, and/or security requirements Make appropriate notifications prior to commencing surveys on roofs or similar structures Review RWP requirements and surveys prior to entry Isolation Controls: Level 1 Level 2 N/A X Labeling Requirements: NONE Survey Package Implementation:	Building Information:		
Class 1 Class 2 Class 3 Unknown X Contaminants of Concern Plutonium X Uranium X Other Justification for Classification: N/A Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads Special Safety Precautions: Access to roofs/structures may require additional safety measure, controls, and/or security requirements Make appropriate notifications prior to commencing surveys on roofs or similar structures Review RWP requirements and surveys prior to entry Isolation Controls: Level 1 Level 2 N/A X Labeling Requirements: NONE Survey Package Implementation:	Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey	
Contaminants of Concern Plutonium X Uranium X Other Justification for Classification: N/A Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads Special Safety Precautions: Access to roofs/structures may require additional safety measure, controls, and/or security requirements Make appropriate notifications prior to commencing surveys on roofs or similar structures Review RWP requirements and surveys prior to entry Isolation Controls: Level 1 Level 2 N/A X Labeling Requirements: NONE Survey Package Implementation:	Building Type Type 1 Type 2 Type 3 X		
Justification for Classification: N/A Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas — use caution in overheads Special Safety Precautions: Access to roofs/structures may require additional safety measure, controls, and/or security requirements. Make appropriate notifications prior to commencing surveys on roofs or similar structures. Review RWP requirements and surveys prior to entry. Isolation Controls: Level 1 Level 2 N/A X Labeling Requirements: NONE Survey Package Implementation:	Classification Class 1 Class 2 Class 3 Un	known X	
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and instrumentation may be required for access into overhead areas – use caution in overheads Special Safety Precautions: Access to roofs/structures may require additional safety measure, controls, and/or security requirements Make appropriate notifications prior to commencing surveys on roofs or similar structures Review RWP requirements and surveys prior to entry Isolation Controls: Level 1 Level 2 N/A X Labeling Requirements: NONE Survey Package Implementation:	Contaminants of Concern Plutonium X Uranium X C	Other 🗆	
Instrumentation may be required for access into overhead areas – use caution in overheads Special Safety Precautions: Access to roofs/structures may require additional safety measure, controls, and/or security requirements. Make appropriate notifications prior to commencing surveys on roofs or similar structures. Review RWP requirements and surveys prior to entry. Isolation Controls: Level 1 Level 2 N/A X Labeling Requirements: NONE Survey Package Implementation: Value	Justification for Classification: N/A		
controls, and/or security requirements surveys on roofs or similar structures Review RWP requirements and surveys prior to entry Isolation Controls: Level 1 Level 2 N/A X Labeling Requirements: NONE Survey Package Implementation: Image: Control of the prior to commencing Review RWP requirements and surveys prior to entry Image: Control of the prior to commencing Review RWP requirements and surveys prior to entry Image: Control of the prior to commencing Review RWP requirements and surveys prior to entry Image: Control of the prior to commencing Review RWP requirements and surveys prior to entry Image: Control of the prior to commencing Review RWP requirements and surveys prior to entry Image: Control of the prior to commencing Review RWP requirements and surveys prior to entry Image: Control of the prior to commencing Review RWP requirements and surveys prior to commencing Review RWP requirements and surveys prior to entry Image: Control of the prior to commencing Review RWP requirements and surveys prior to entry Image: Control of the prior to commencing Review RWP requirements and surveys prior to entry Image: Control of the prior to commencing Review RWP requirements and surveys prior to commencing Review RWP requirements and surveys prior to entry Image: Control of the prior to commencing Review RWP requirements and surveys prior to entry Image: Control of the prior to commencing Review RWP requirements and surveys prior to entry Image: Control of the prior to commencing Review RWP requirements and surveys prior to entry Image: Control of the prior to control of the prior to control of the prior to control of the prior to control of the prior to control of the prior to control of the prior to control of the prior to control of the prior to control of the prior to control of the prior to control of the prior to control of the prior to control of the prior to control of the prior to control of the prior to control of the prior to control of the prior to control		- · · · · · · · · · · · · · · · · · · ·	
Level 1 Level 2 N/A X Labeling Requirements: NONE Survey Package Implementation: 1/15/99 Date N/A Date N/5/99	controls, and/or security requirements Make ap	opropriate notifications prior to commencing	
Labeling Requirements: NONE Survey Package Implementation: 1/15/99 Date 11/15/99 Date	Isolation Controls:		
Survey Package Implementation: 1/15/99 Date 11/15/99 Package Implementation:	Level 1 □ Level 2 □ N/A X		
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Package ID. 99-0002	Building 707 VALVE VAULTS (EXTERIOR/ROOF)
Survey Area. LL	Survey Unit N/A
Survey Unit Description: ROOF AND EXTERIOR OF VALVE VAULTS VV-007 AND VV-008,	

WEST OF BUILD	-	ALVE VICELIS VV GOV INVE VV GGG,
Mınımum Survey/Sampling Measurement Requirements		
Magguramant	Number and Type	Comments

Measurement	Number and Type	Comments
Surface Activity	FLOORS/WALLS < 2 meters N/A	SEE NOTE 1
Measurements	CEILINGS/WALLS > 2 meters N/A	SEE NOTE 2
		SEE NOTE 3
	ROOF/EXTERIOR	SEE NOTE 4
	32 <u>unbiased</u> survey points uniformly distributed around the exteriors of <u>each valve vault</u> structure as follows	
	- 3 survey points per exterior wall (total of 12 survey points per valve vault)	
	- 4 survey points on roof	



Package ID: 99-0002	Building 707 VALVE VAULTS (EXTERIOR/ROOF)
Survey Area: LL	Survey Unit N/A
Survey Unit Description ROOF AND EXTERIOR OF VALVE VALUES VV-007 AND VV-008.	

Survey Unit Description ROOF AND EXTERIOR OF VALVE VAULTS VV-007 AND VV-008, WEST OF BUILDING 707

Minimum Survey/Sampling Measurement Requirements		
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 32 1 m² surface scans shall be taken at each location identified for surface activity measurements. Locations found above the DCGL shall be documented. CEILINGS/WALLS > 2 meters. NONE. EQUIPMENT. NONE.	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples Volumetric Samples	Total of 2 coupon samples taken from roof of each valve vault structure	
Isotopic Gamma Scans	NONE	

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (CONT)

Package ID: 99\0002	Building 707 VALVE VAULTS (EXTERIOR/ROOF)
Survey Area: LL	Survey Unit. N/A

Survey Unit Description: ROOF AND EXTERIOR OF VALVE VAULTS VV-007 AND VV-008, WEST OF BUILDING 707

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Direct beta contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha then beta/gamma contamination

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample.
- RCT perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-185-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha then beta) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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Package ID: 99-0002	Building 707 VALVE VAULTS (EXTERIOR/ROOF)
Survey Area: LL Survey Unit N/A	
Survive Host Decomptons POOF AND EXTEDIOR OF VALVE VALUETS VV 007 AND VV 009	

Survey Unit Description: ROOF AND EXTERIOR OF VALVE VAULTS VV-007 AND VV-008, WEST OF BUILDING 707

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling. If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample.
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis
 Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements



Package ID: 99-0002	Building 707
Survey Area LL	Survey Unit N/A

Survey Unit Description: • ROOF AND EXTERIOR OF VALVE VAULTS VV-007 AND VV-008, WEST OF BUILDING 707

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area. The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area.
- 3 Survey results determined to be above the radiological posting criteria applicable to the specified survey area shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos.
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 5 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented separately and in addition to the standard PAT measurement taken at the identified survey point.
- Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photoraphic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

Package ID: 99-0002	Building 707
Survey Area: LL	Survey Unit N/A
Survey Unit Description: : ROOF AND EXWEST OF BUILDING 707	XTERIOR OF VALVE VAULTS VV-007 AND VV-008,
Survey/	Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS:

- Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- To maintain consistency in the measurement process, the identified survey point is to be located in the lower left hand corner of the 1m² scan area The standard fixed (PAT) measurement location and removable contamination surveys shall also be collected in the lower left hand corner of the specified scan area except where elevated readings are detected
- 3 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 4 Elevated survey results obtained in areas without suspected contamination (i.e., non-radiological areas, and radiological buffer areas) AND thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The "elevated reading" PAT measurement will be documented. All other measurements will be collected at the elevated reading location as well.
- 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- Where not already indicated assured that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e g, indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 9	9-0002	Building 707 VAI	LVE VAULIS (EXII	ERIOR/ROOF)
Survey Area· LL		Survey Unit N/A		
Change #	Description]	Initiator/ Date	PRE
/	Added page GA		9/ 12/21/19	MISE ON
	Deleted Ret to dike	TEAN 5" NEAS	14/12/2/19	11/9 1 0
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SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 99-0002	Building 707 VALVE VAULTS (E	XTERIOR/ROOF)			
Survey Area: LL	Survey Unit N/A				
Survey Type: Reconnaissance Level Characterization Survey X Final Status Survey □					
All Documentation Reviewed for Completion	RCT Supervisor	PRE			
Scan Surveys					
Total Activity Surveys					
Exposure Rate Surveys					
Removable Surveys					
Media Samples					
Volumetric Samples					
All Surveys and Samples Accounted For	RCT Supervisor	PRE			
Scan Surveys					
Total Activity Surveys					
Exposure Rate Surveys					
Removable Surveys					
Media Samples					
Volumetric Samples					
Comments					
	RCT Supervisor Signature	Date			
	D. DEG				
	Project RE Signature	Date			
NESS Wanager Frinted Name Employee #	RESS Manager Signature	Date			

n	NSTRUMENT	DATA					
Mfg	Mfg	Mfg_		Survey Typ	pe:		
Model	Model	Mode	Model				
Serial #	Serial #	Serial	Serial #				
Cal Due	Cal Due						
Bkg	Bkg						
Efficiency	Efficiency	Effici	ency	RWP#			
MDA	MDA	MDA					
				Date		Time	
Mfg	Mfg						
Model	Model	Mode	Model		/	<i>!</i>	1
Serial #	Serial #	Serial	#	P	rınt name	Signatu	ire Emp
Cal Due	Cal Due	Cal D	ue				
Bkg	Bkg	Bkg _		RCT		<u> </u>	/
Efficiency	Efficiency	Effici	ency	P	rınt name	Signatu	ire Emp
MDA	MDA	MDA	·				
REMOVABLE	REMOVABLE	DIRECT	DIRECT	REMOVABLE	REMOVABLE	DIRECT	DIRECT
REMOVABLE Alpha DPM/100 cm² 1 2	Beta DPM/100 cm²	DIRECT Alpha DPM/100 cm²	DIRECT Beta DPM/100 cm ²	REMOVABLE Alpha DPM/100 cm² 26	REMOVABLE Beta DPM/100 cm ²	DIRECT Alpha DPM/100 cm ²	DIRECT Beta DPM/100 cm ²
Alpha DPM/100 cm² 1 2 3	Beta DPM/100 cm²	Alpha	Beta	Alpha DPM/100 cm ² 26 27 28	Beta	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4	Beta DPM/100 cm²	Alpha	Beta	Alpha DPM/100 cm² 26 27 28 29	Beta	Alpha	Beta
Alpha DPM/100 cm² 1 2 3	Beta DPM/100 cm²	Alpha	Beta	Alpha DPM/100 cm ² 26 27 28	Beta	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4	Beta DPM/100 cm²	Alpha	Beta	Alpha DPM/100 cm² 26 27 28 29 30 31 32	Beta	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8	Beta DPM/100 cm²	Alpha	Beta	Alpha DPM/100 cm² 26 27 28 29 30 31 32 33	Beta	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9	Beta DPM/100 cm²	Alpha	Beta	Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34	Beta	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10	Beta DPM/100 cm²	Alpha	Beta	Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35	Beta	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9	Beta DPM/100 cm²	Alpha	Beta	Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34	Beta	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11	Beta DPM/100 cm²	Alpha	Beta	Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38	Beta	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 14	Beta DPM/100 cm²	Alpha	Beta	Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39	Beta	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	Beta DPM/100 cm²	Alpha	Beta	Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40	Beta	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	Beta DPM/100 cm²	Alpha	Beta	Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41	Beta	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	Beta DPM/100 cm²	Alpha	Beta	Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 40 41 42	Beta	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	Beta DPM/100 cm ²	Alpha	Beta	Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41	Beta	Alpha	Beta
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Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19	Beta DPM/100 cm ²	Alpha	Beta	Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 40 41 42 43 44 45 46	Beta	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	Beta DPM/100 cm ²	Alpha	Beta	Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 40 41 42 43 44 45 46	Beta	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Beta DPM/100 cm ²	Alpha	Beta	Alpha DPM/100 cm² 26 27 28 29 30 31 32 33 34 35 36 37 38 40 41 42 43 44 45 46 47	Beta	Alpha	Beta
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Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Beta DPM/100 cm²	Alpha	Beta DPM/100 cm²	Alpha DPM/100 cm² 26	Beta	Alpha	Beta

	RADIOLOGICAL SAFETY Drawing Showing Survey Points					
	VALVE VAULT VV-0	007 EXTERIOR				
		NORTH WALL EXTERIOR	2			
WEST	Γ WALL EXTERIOR	ROOL	EAST WALL EXTERIOR			
		SOUTH WALL EXTERI	OR			
		SOUTH WALL EXTERIOR	OR			

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I	NSTRUMENT	'DATA	The second secon	objects with a first state of the state of t			the many of the constitution of the constituti
Mfg	Mfg	Mfg.		Survey Ty	pe:		
Model	Model		sl	Building.			
Serial #	Serial #	Seria	#	Location.			
Cal Due	Cal Due	Cal D)ue	Purpose:			
3kg	Bkg			-			
Efficiency				RWP#			
MDA			\			 	
			_	Date	(Time:	
Afg	Mfg	Mfg.					
Model	Model	Mode	el	RCT		/	1
erial #	Serial #	Seria	1#		rint name	Signat	
Cal Due)ue	1			
3kg	Bkg.			RCT		/	
Efficiency				P	rint name	Signat	ure Emp
MDA	MDA					· ·	•
	_	-	SURVEY 1	RESULTS			
REMOVABLE Alpha	Beta	DIRECT Alpha	DIRECT Beta	REMOVABLE Alpha	REMOVABLE Beta	DIRECT Alpha	DIRECT Beta
			DIRECT	REMOVABLE Alpha DPM/100 cm ²			
Alpha DPM/100 cm ² l	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm ² 26 27	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm ²	Beta DPM/100 cm ²	Alpha	DIRECT Beta	REMOVABLE Alpha DPM/100 cm ² 26 27 28	Beta DPM/100 cm ²	Alpha	Beta
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Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13	DPM/100 cm ²	Alpha	DIRECT Beta DPM/100 cm²	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33. 34 35 36 37 38 39 40	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2. 3 4 5 6 7 8 9 10 11 12. 13 14 15 16	DPM/100 cm ²	Alpha	DIRECT Beta DPM/100 cm²	REMOVABLE Alpha DPM/100 cm² 26 27 28 30 31 32 33 34 35 36 37 38 39 40 41	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 8 9 10 11 12 13 14 15 16 17	DPM/100 cm ²	Alpha	DIRECT Beta DPM/100 cm²	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33. 34 35 36 37 38 39 40 41 42	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	DPM/100 cm ²	Alpha	DIRECT Beta DPM/100 cm²	REMOVABLE Alpha DPM/100 cm² 26 27 28 30 31 32 33 34 35 36 37 38 39 40 41	Beta DPM/100 cm ²	Alpha	Beta
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Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	Beta DPM/100 cm²	Alpha	DIRECT Beta DPM/100 cm²	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33. 34 35 36 37 38 39 40 41 42 43 44 45 46 47	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	Beta DPM/100 cm²	Alpha	DIRECT Beta DPM/100 cm²	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33. 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm ² 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Beta DPM/100 cm²	Alpha	DIRECT Beta DPM/100 cm²	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33. 34 35 36 37 38 39 40 41 42 43 44 45 46 47	Beta DPM/100 cm ²	Alpha	Beta
Alpha DPM/100 cm² 1 2. 3 4 5 6 7 8 9 10 11 12. 13 14 15 16 17 18 19 20 21 22 23 24 25	Beta DPM/100 cm²	Alpha	DIRECT Beta DPM/100 cm²	REMOVABLE Alpha DPM/100 cm² 26 27 28 29 30 31 32 33. 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	Beta DPM/100 cm ²	Alpha	Beta

	RADIOLOGICAL SAF Drawing Showing Survey Po		
VALVE VAULT VV-008	EXTERIOR		•
			•
	NORTH WALL EXTERIOR		
	'		
WEST WALL EXTERIOR		EAST WALL EXTERIOR	
	ROOF		
	SOUTH WALL EXTERIOR		

Survey Area: 707 Cluster Survey Unit: N/A Building N/A

Survey Unit Description

Characterization Package for B-707 Cluster ATTACHMENT 1

Data Quality Objectives:

This section defines the DQOs for reconnaissance level characterization (RLC) of the B-707 cluster buildings and structures

1 The Problem

The problem involves characterizing the nature, and extent of radiological and hazardous substance contamination in the B-707 cluster buildings and structures in order to 1) evaluate required extent/methods of disposition, 2) estimate approximate volumes of sanitary, low-level (LLW), low-level mixed, transuranic (TRU), transuranic-mixed, TSCA, asbestos, and RCRA waste generated during the D&D process, and 3) provide input to the design of in-process and pre-demolition (final) survey characterization

2 2 The Decision

The critical decision is estimating the inventories of the different categories of waste generated during D&D of the B-707 cluster buildings and structures. Characterization data evaluation will involve assessing if enough validated data exist to adequately describe the nature and extent of contamination or if additional data are necessary.

23 Inputs to the Decision

The inputs to the decision include the reconnaissance level characterization (RLC) data and information generated from previous characterization activities (e.g., historical site assessment, scoping surveys, etc.), as well as the applicable action levels, unrestricted release criteria, transportation requirements, waste management regulations, pollution prevention/waste minimization criteria, ALARA, and WAC

RLC data to be collected include

- radiological surveys of all buildings and structures,
- sampling of paint chips from floors of selected buildings for isotopic analysis,
- core sampling of concrete floors in B-707 for RCRA metals TCLP analysis,
- smear sampling for beryllium in selected areas of B-707,
- asbestos inspection and sampling

2.4 Decision Boundaries

The decision boundaries include the spatial confines of the survey areas within the B-707 cluster buildings and structures as described in detail in this Characterization Package

2 5 Decision Rules

If process knowledge/history supports the premise that no radioactive contamination is present, the related area and/or volume of material is considered sanitary waste or may be free-released

If any radiological survey/scan measurement exceeds the surface contamination thresholds provided in DOE Order 5400 5 and the RFETS Radiological Control Manual, the related area or volume of material must be remediated or disposed of as radiological or mixed waste

If all radiological survey/scan measurements are below the surface contamination thresholds provided in DOE Order 5400 5 (Radiation Protection of the Public and Environment) and the RFETS Radiological Control Manual, the related area or volume of material is considered sanitary waste or may be free-released

Survey Area: 707 Cluster	Survey Unit: N/A	Building N/A

Survey Unit Description

Characterization Package for B-707 Cluster ATTACHMENT 1

If any radiological sample measurement (or disposal unit volume) exceeds 100 nanocuries per gram of transuranic material, the associated volume must be disposed of as transuranic (TRU) waste

RCRA Constituents

If the waste is mixed with or contains a listed hazardous waste, or if the waste exhibits a characteristic of a hazardous waste, then the waste is considered RCRA-regulated hazardous waste in accordance with 6 CCR 1007-3. Parts 261 and 268

CERCLA Hazardous Substances

40 CFR 302 4 lists hazardous substances and reportable quantities that must be reported to the waste disposal facilities

Beryllium

If surface concentrations of beryllium are equal to or greater than 0.2 ug/100 cm², the material is considered beryllium contaminated per the Occupational Safety and Industrial Hygiene Program Manual, Chapter 28, Chronic Beryllium Disease Prevention Program If the concentrations are below 0.2 ug/100 cm², the material is considered non-beryllium contaminated

If detectable beryllium contamination can be shown through process knowledge to consist of beryllium powder (P015 under RCRA), then the material is considered RCRA waste and subject to treatment standards under 40 CFR 268 40

PCBs

Material/media potentially contaminated with PCBs will be categorized per 40 CFR 761. If material meets the definition of PCB Bulk Product Waste, it may be disposed of at a facility that is permitted, licensed, or registered by a State to manage municipal solid waste subject to 40 CFR 258, or non-municipal, non-hazardous waste subject to 40 CFR 257 5 through 257 30. For most bulk product wastes, implementing this strategy precludes the need for PCB characterization prior to or during facility disposition, as long as restrictions outlined in 40 CFR 761 62 regarding their disposal are met. However, notification to the disposal facility is required at least 15 days in advance of shipping wastes to the facility if that disposal facility does not possess a commercial PCB storage or disposal approval.

Management strategy for PCB remediation waste will be determined on a case-by-case basis. If PCB contamination is suspected, or if a PCB spill is discovered that has not been cleaned up, the area will be treated as directed by the most recent versions of 40 CFR 761 through 766, the RFETS Polychlorinated Biphenyls Management Plan (PRO-673-EWQA-1 5), and the WSRIC standards. For each planned cleanup, PCB regulations under TSCA will be evaluated as potentially applicable or relevant and appropriate requirements (ARARs), including the disposal options for PCB remediation waste listed under 40 CFR 761.61

Asbestos

In accordance with 40 CFR 763 and 5 CCR 1001-10, if any one sample of a sample set representing a homogeneous medium results in a positive detection (i.e., >1% by volume), then material is considered ACM, otherwise the material is considered non-ACM

Survey Area: 707 Cluster Survey Unit: N/A Building N/A
Survey Unit Description

Characterization Package for B-707 Cluster ATTACHMENT 1

2 6 Tolerable Limits on Decision Errors

Acceptable false positive and negative errors generally range from 1% to 10%. Other limits may be used, if agreed to by the D&D Projects and Construction Organization, the Project Manager, DOE and the LRA Decision error does not apply to asbestos sample sets per 40 CFR 763. Results are compared with the action levels on a sample-by-sample basis

Sampling design error for radiological sampling will be controlled by requiring a minimum number of uniformly distributed (n=30) and biased surveys (n=10) to be performed in each survey area. In addition, surface area size limits are assigned for survey areas based on contamination potential

2 7 Optimization of Plan Design

The following criteria provide potential areas for optimization of the RLCP

- If additional data (radiological, RCRA, TSCA, and asbestos) are not required to make decisions, then RLC surveys/sampling are not required
- If RCRA, TSCA or asbestos survey/samples are required for materials, media, equipment and interior and exterior building surfaces, refer to the DDCP, Section 6.0

If radiological survey/samples are required for materials, media, equipment and interior and exterior building surfaces, then the following requirements apply

- A minimum number of uniformly distributed and biased measurements (refer to Appendix A) must be collected
- A minimum number of biased samples must be collected (if surface media or volumetric contamination are suspect)

Radiological field measurement methods and instrumentation will be performed in accordance with approved RFETS site procedures and this document

Radiological sampling and preparation for laboratory measurements will be performed in accordance with approved RFETS site procedures and this document

SURVEY PACKAGE TRACKING FORM

Package ID: 2000-0002		Building (707) 778 INTERIOR EAST Survey Unit N/A			
Survey Area: A					
Initiator/ Date	Release Date	Validation Date	Closure Date		
9) 2/24/00	(m) 3/10/00	dr 5/2/00	d 5/2/00		

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 200	0-0002	Building* (707) 77	8 INTERIOR EAST	Type 2		
Survey Area· A		Survey Unit. N/A	1	Area (m ²) 1366		
OF BUILDING TO		UMN 8 IS LOCATEI		AREA EXTENDS F 7 MAA GUARD VES		
Survey Type		<u></u>	Classification			
RLC Survey X	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown X	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
45	21	30	0	0	55	
Building:		Туре		Survey Area		
Survey Unit			Area (m²)			
Survey Unit Desc	cription					
Survey Type		· ···	Classification			
RLC Survey □	FSS 🗖		Class 1 □ Class		Jnknown □	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building		Туре.		Survey Area		
Survey Unit.			Area (m²)			
Survey Unit Desc	cription		2			
Survey Type			Classification			
RLC Survey □	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown 🗆	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building		Туре		Survey Area		
Survey Unit			Area (m²)			
Survey Unit Desc	eription					
Survey Type·			Classification			
RLC Survey □	FSS 🗆		Class 1 □ Class	2□ Class 3□ U	Jnknown □	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Į						

SURVEY PACKAGE COVER SHEET

Package ID: 2000-0002	Building (707) 778 INTERIOR EAST
Survey Area: A	Survey Unit: N/A
Survey Unit Description: INTERIOR OF BUILDING END OF BUILDING TO COLUMN 8 (COLUMN 8 IS LOCATHIS AREA IS NOT RADIOLOGICALLY POSTED	
Building Information:	
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey
Building Type Type 1 □ Type 2 X Type 3 □	
Classification Class 1 🗆 Class 2 🗖 Class 3 🗖 Un	known X
Contaminants of Concern Plutonium X Uranium X O	ther 🗆
Justification for Classification: N/A	
Special Support Requirements: Ladder, manla instrumentation may be required for access into	· · · · · · · · · · · · · · · · · · ·
Special Safety Precautions: Access to overhead additional controls or approvals from security made	· · · · · · · · · · · · · · · · · · ·
Isolation Controls:	
Level 1 🗆 Level 2 🗖 N/A X	
Labeling Requirements: NONE	
Survey Package Implementation:	
,	3/2/20
	Date
	N/A
	Date
	3/8/00
	Date
	5-2-00
	Date D.T./A
	N/A
	Date 1/2/a
	Date

Package ID 2000-0002	Building (707) 778 INTERIOR EAST
Survey Area: A	Survey Unit N/A

Survey Unit Description. INTERIOR OF BUILDING 778 (EAST NON-RAD) AREA EXTENDS FROM EAST END OF BUILDING TO COLUMN 8 (COLUMN 8 IS LOCATED JUST WEST OF 707 MAA GUARD VESTIBULE THIS AREA IS NOT RADIOLOGICALLY POSTED

	Minimum Survey/Sampling Measurer	
Measurement	Number and Type	Comments
urface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1
leasurements	45 <u>uniformly distributed</u> survey points as follows	SEE NOTE 2
	- 3 points total per "column section" with 1	SEE NOTE 3
	point on walls, 2 points on floor alternating wall points between North and South half of rooms (45 points total for ~15 column sections)	SEE NOTE 4
	(NOTES Column spacing is approximately every 20 feet. Where carpeting is present on floors and cannot be removed for surveys, take additional wall surveys in lieu of floor surveys.)	
	10 biased survey points at areas such as	
	- floor drains	
	- Areas that have a higher likelihood of contamination based on history/past use and based upon RCT judgement	
	CEILINGS/WALLS > 2 meters	
	11 <u>biased</u> surveys of ceilings and walls > 2 meters as follows	
	- 1 point on walls > 2 meters in every other (alternating) column sections (8 points total)	
	- 3 points on ceiling tiles	
	EQUIPMENT	
	30 biased survey points on fixed equipment throughout area	

Package ID: 2000-0002	Building (707) 778 INTERIOR EAST
Survey Area. A	Survey Unit N/A

Survey Unit Description: INTERIOR OF BUILDING 778 (EAST NON-RAD) AREA EXTENDS FROM EAST END OF BUILDING TO COLUMN 8 (COLUMN 8 IS LOCATED JUST WEST OF 707 MAA GUARD VESTIBULE THIS AREA IS NOT RADIOLOGICALLY POSTED

	Mınımum Survey/Sampling Measure	ment Requirements
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 55 1 m² surface scans shall be taken at each location identified for surface activity measurements Locations found to be above the DCGL will be noted CEILINGS/WALLS > 2 meters NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
	EQUIPMENT NONE	
Media Samples	Due to floor configuration tile/linoleum, no media samples to be taken in this survey area	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	



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Package ID: 2000-0002	Building (707) 778 INTERIOR EAST
Survey Area: A	Survey Unit N/A

Survey Unit Description: Interior of Building 778 (East Non-Rad) Area extends from East End of Building to Column 8 (Column 8 is located just west of 707 maa guard vestibule this area is not radiologically posted

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

Package ID: 2000-0002	Building (707) 778 INTERIOR EAST
Survey Area: A	Survey Unit: N/A

Survey Unit Description. Interior of Building 778 (East Non-Rad) Area extends from East End of Building to Column 8 (Column 8 is located just west of 707 maa guard vestibule this area is not radiologically posted

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- 2 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 3 If during the performance of $1m^2$ scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The highest "elevated reading" PAT measurement found in the $1m^2$ scan area will be documented. Swipe measurements will be collected at the elevated reading location as well
- 4 If during the performance of $1m^2$ scan surveys a significant instrument response (e.g., elevated reading) is not noted, fixed (PAT) measurements and swipes will be taken from the lower left hand corner of the $1m^2$ scan area to maintain consistency in sample point locations
- 5 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- 7 Where not already indicated assure that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e g, indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID·	2000-0002	Building: (707) 778 INTERIOR EAST Survey Unit N/A						
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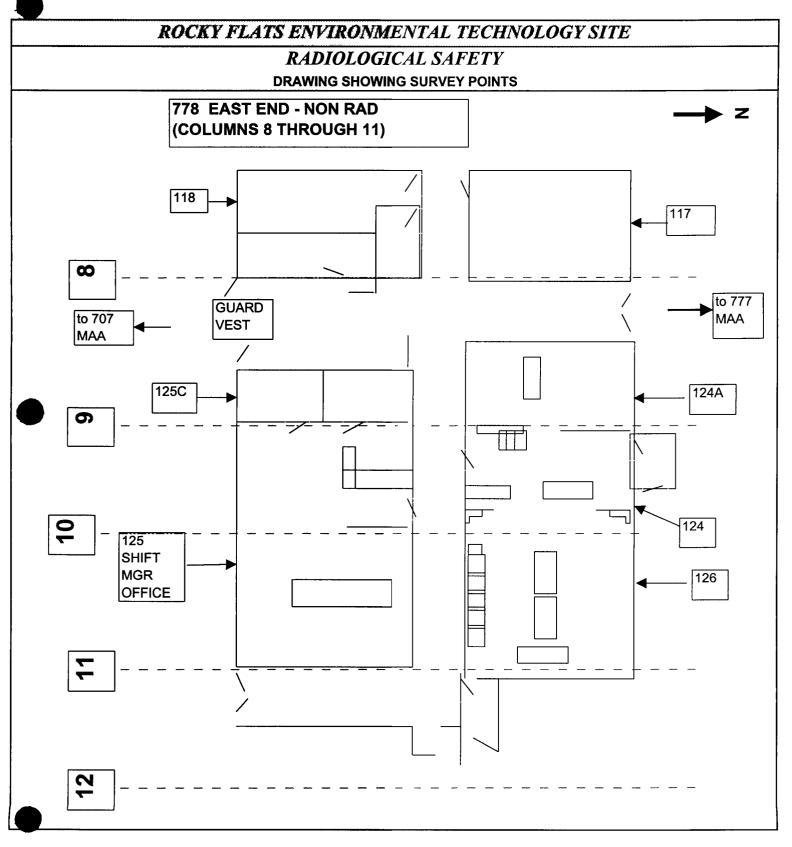
SURVEY PACKAGE VALIDATION CHECKLIST FORM

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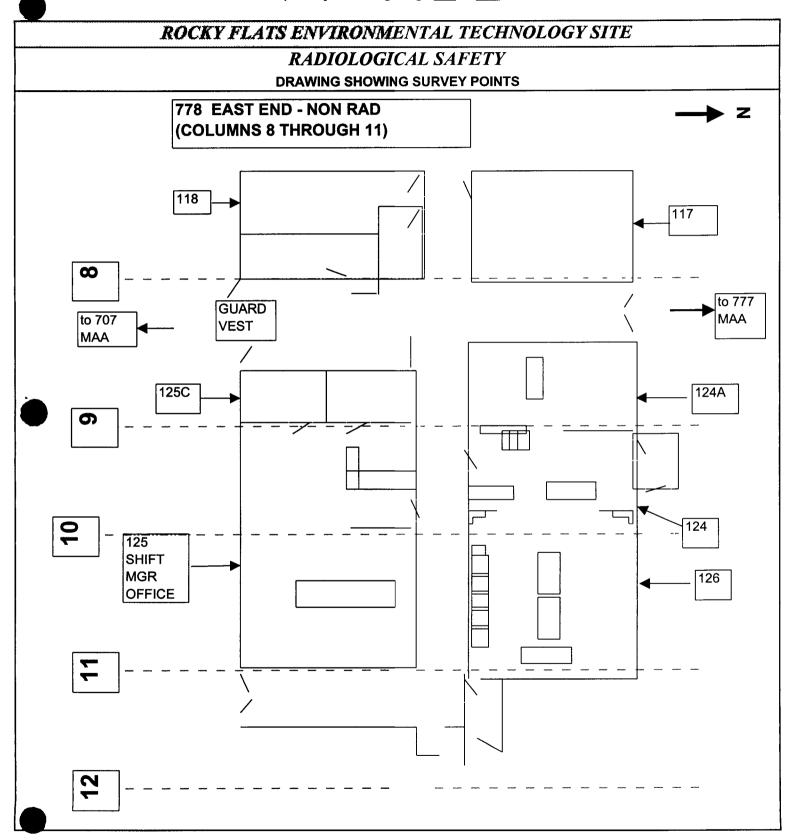
RS FORMS 07 02-01

Pages 10 of 33 to 33 of 33 superceded 1914/20/00 Chy #1 ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SYTE **INSTRUMENT DATA** Survey Type **CONTAMINATION** Mfg Mfg Model Model Model Building Serial# Serial# Serial# Location Cal Due Cal Due Cal Due Purpose Reconnaisance Level Characterization Bkg Bkg Bkg RWP# Efficiency Efficiency Efficiency MDA MDA MDA Date Time Mfg` Mfg Mfg Model RCT Model Model Serial# Serial# Serial# Signature Print name Cal Due Cal Due Cal Due Bkg _ RCT Bkg _ Bkg Signature Emp # Efficiency Efficiency Efficiency Print name MDA MDA **MDA** PRL# Comments **SURVEY RESULTS** Location/Description Removable Direct Point Location/Description Removable Direct (Results in DPM/100CM²) (Results in DPM/100CM2) Alpha Beta Alpha Beta Alpha Beta Alpha Beta 21 2 22 3 23 24 25 26 7 27 29 10 30 11 31 12 32 13 33 14 34 15 35 36 16 17 **37** 18 38 19 39 Date Reviewed **RS Supervision** Print Name Signature Emp \#

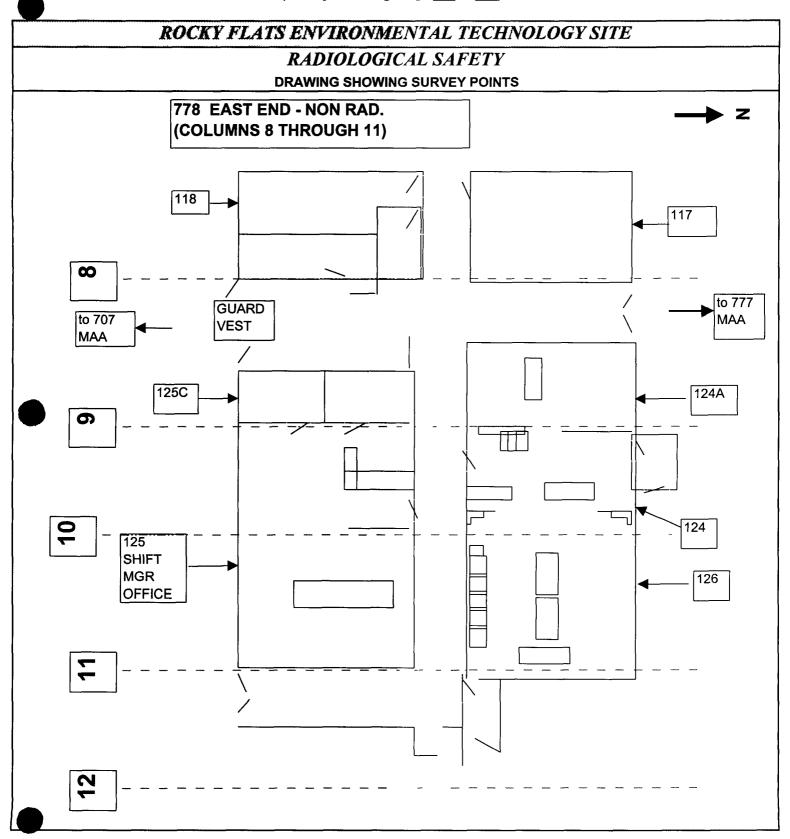


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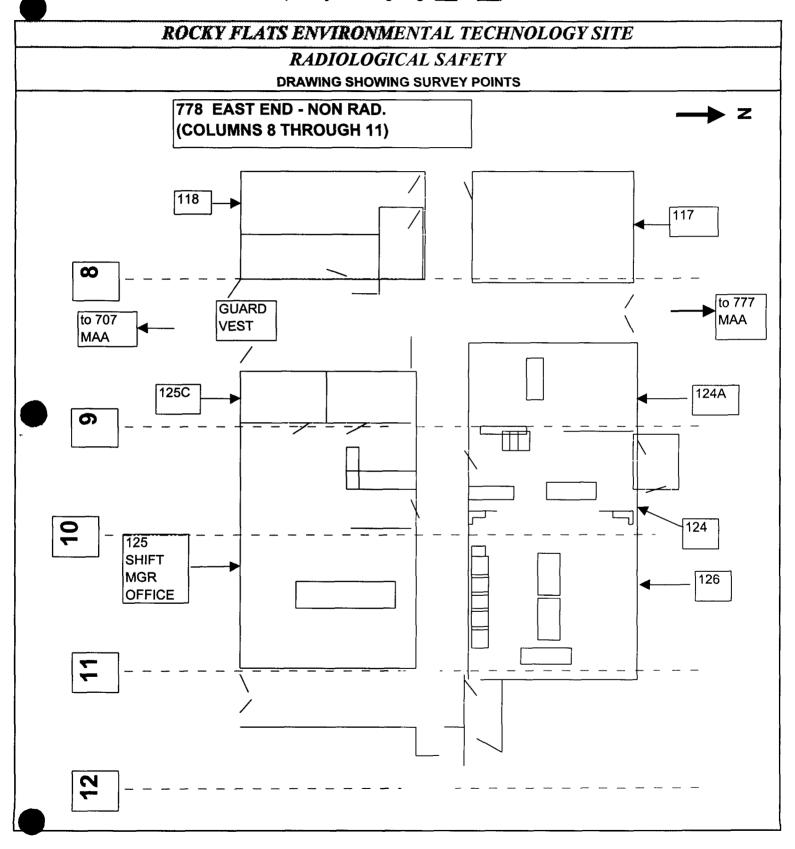
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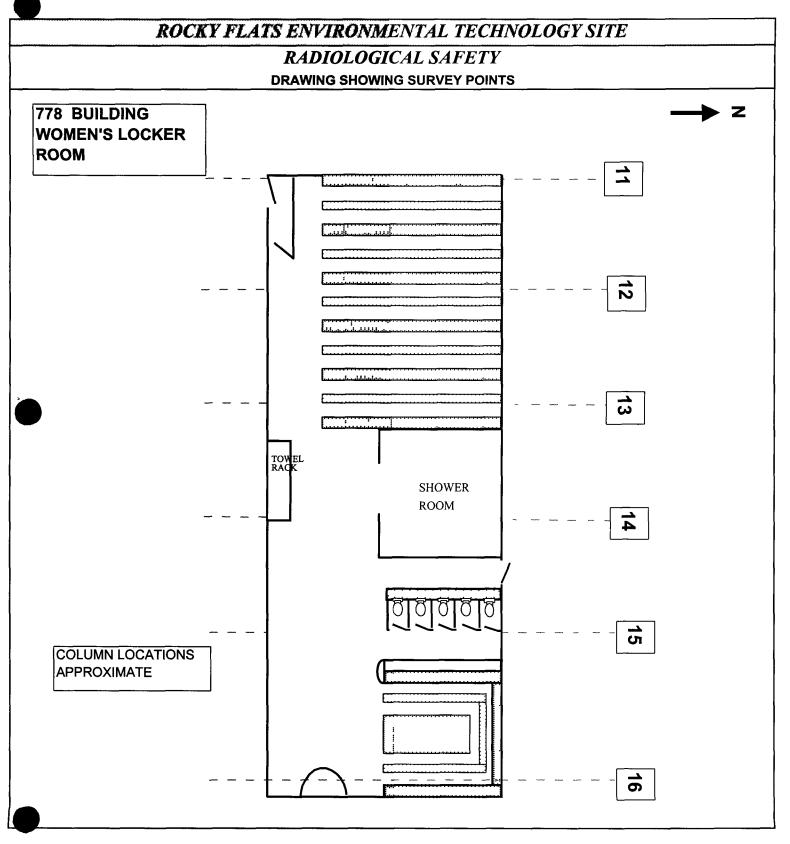


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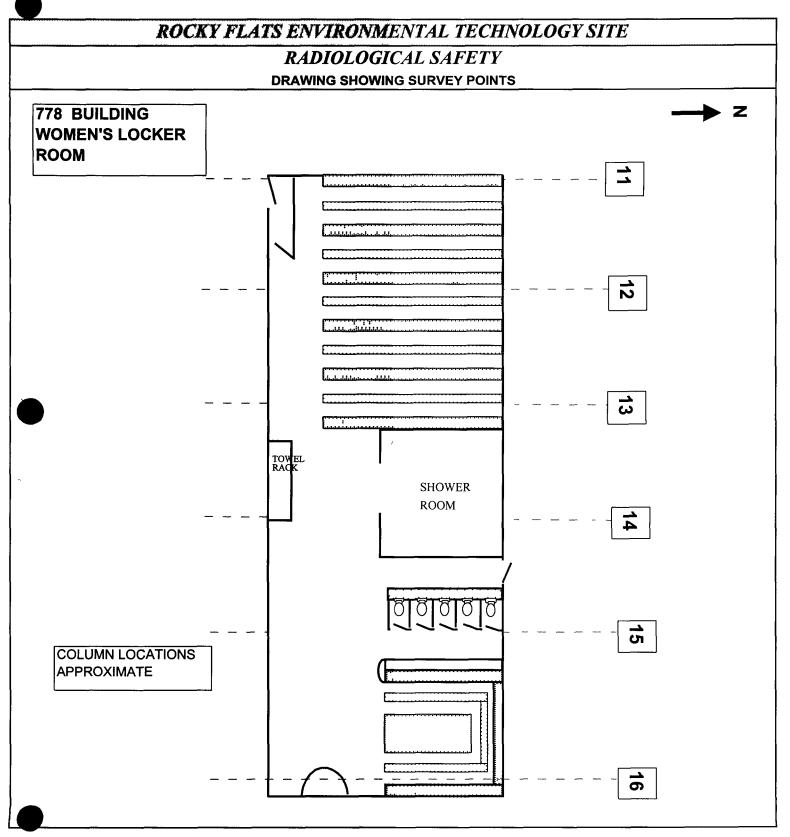
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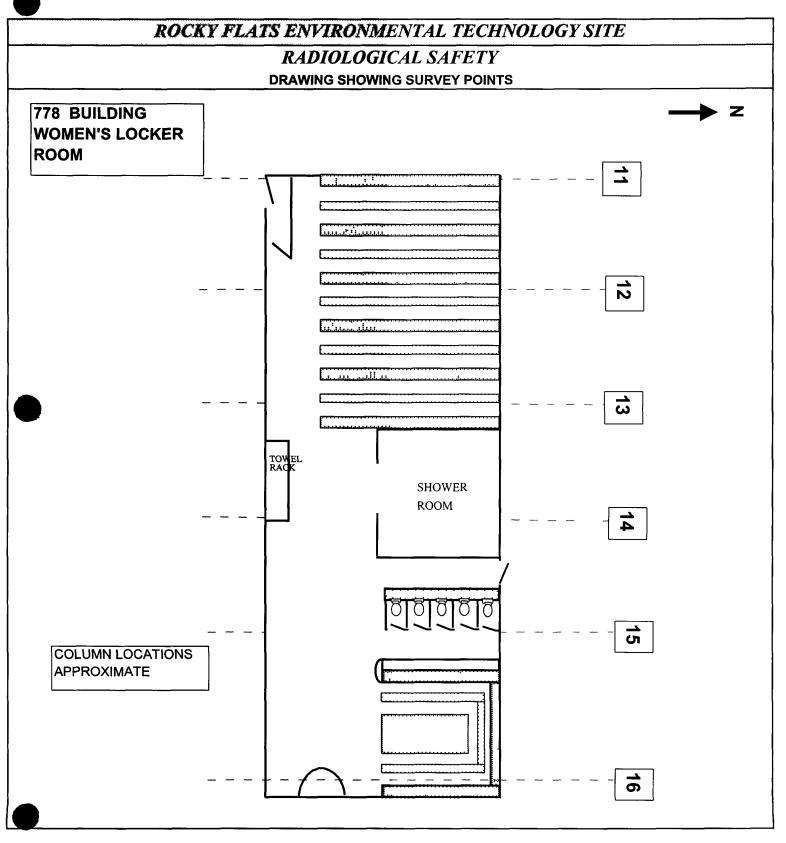
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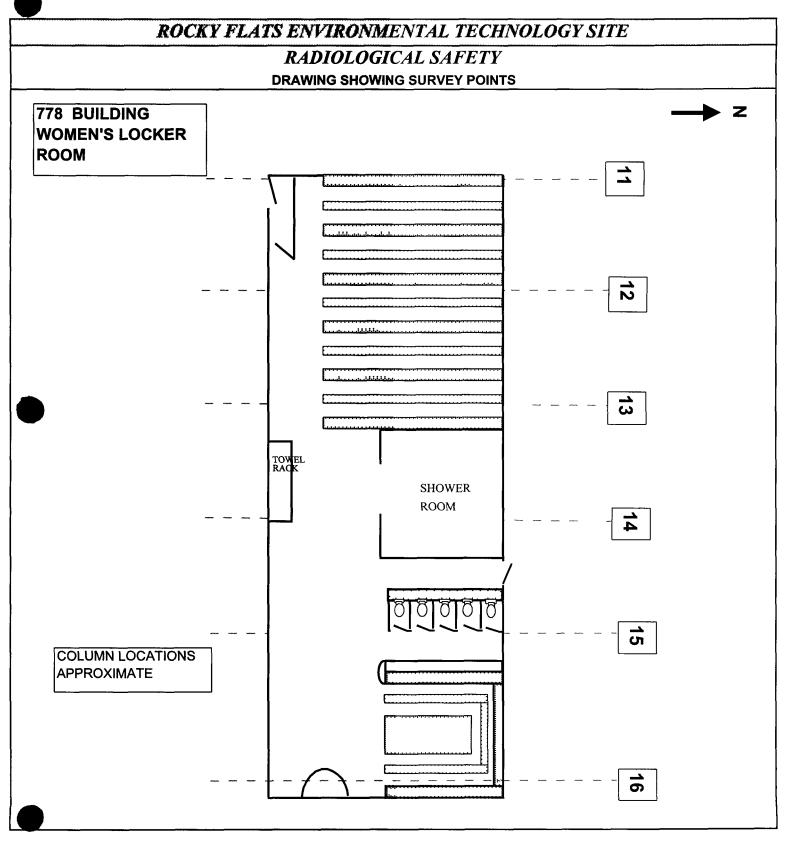
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Mfg		Mfg M		Mfg											
Mode		Model	Model				RCT			/				/	
Serial		Serial#		al#			1		name		Signati	ure		Em	p
Cal D		Cal Due		Due							<i>6</i>	-			•
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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17					vable	Direct	Point # 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37	L							
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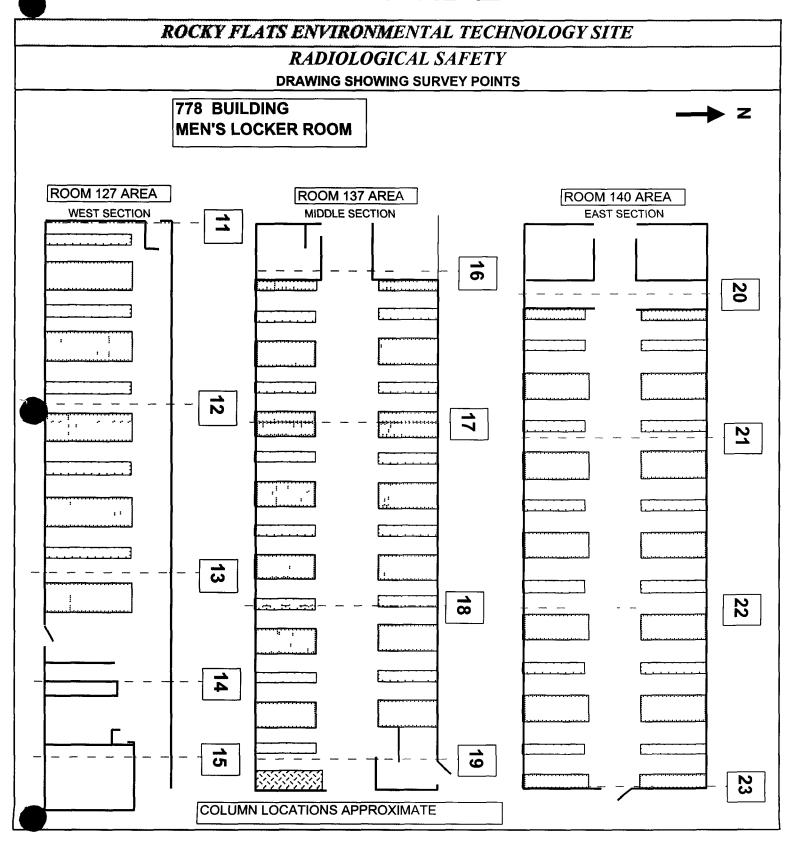
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	-	ROCKI	T DATA	*******											
ifg		Mfg						Survey '	Гуре	CONT	AMINATIO	ON			
Mode	<u></u>	Model	Mod	lel							****			-	_
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ИDА		MDA	MD.	A											
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1 2 3		-			ovable	Dır	ect	Point # 21 22 23	Lo						_
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1 2 3		-			ovable	Dır	ect	Point # 21 22 23	Lo						_
1 2 3 4 5		-			ovable	Dır	ect	Point # 21 22 23 24 25	Lo						_
1 2 3 4 5 6		-			ovable	Dır	ect	Point # 21 22 23 24 25 26	Lo						_
1 2 3 4 5 6 7		-			ovable	Dır	ect	Point # 21 22 23 24 25 26 27	Lo						_
1 2 3 4 5 6 7 8		-			ovable	Dır	ect	Point # 21 22 23 24 25 26 27 28	Lo						_
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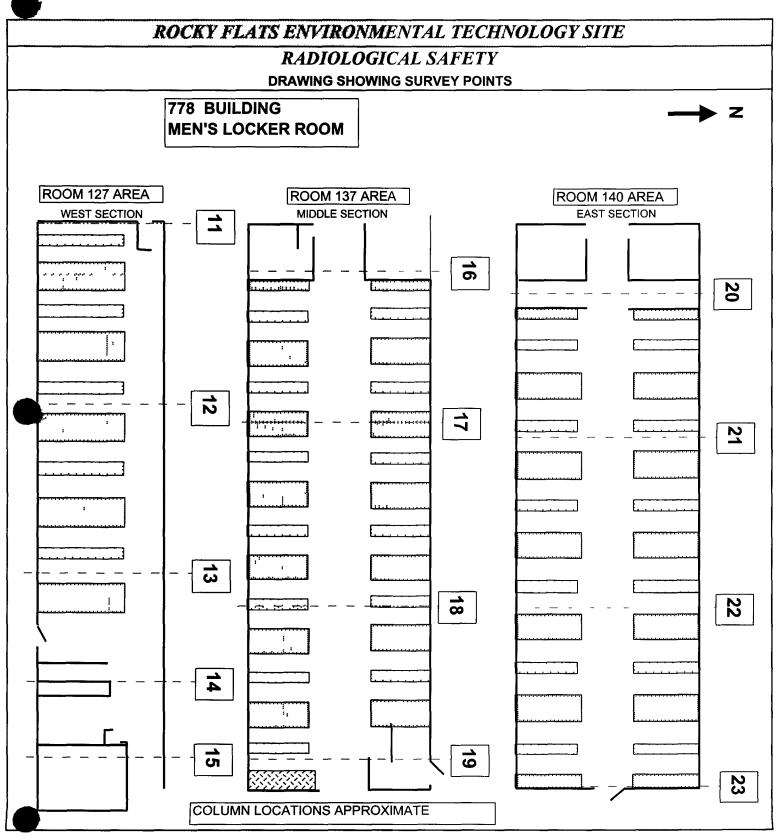
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	ROCK)			VI	RO)	VI AL	ENTAL	TECH	NOLO	GY SI	TE				
	INSTRUMEN											_			
fg	Mfg	Mfg					Survey 7								
Model	Model						Building								
Serial#	Serial#		al#				Location				-				
Cal Due	Cal Due		Due_				Purpose	Reconn	aisance	Level C	haractei	ızatı	on		
Bkg	Bkg						D.11110 !!								
Efficiency		— Effic	ency				RWP#								
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Mfg	Mfg	Mfg					Date				Time				•
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Serial#	Senal#		al#				KC1	Print r	name		Signat	ure		/ Em	p #
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Bkg		— Bko					RCT			/				/	
Efficiency	Efficiency		ency				···-	Print r	name		Signat	ure		Em	p #
MDA	MDA	MD.	-	-							2.8				F
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Point I	Location/Description		Remo		_				cation/De	scription		Remo	ovable	Dıı	ect
	Location/Description Results in DPM/100CM ²)			ovable	_	ect	Point	Lo	cation/Des	-			ovable Beta	D11 Alpha	ect Beta
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1 2 3 4 5				ovable	Dıı	ect	Point # 21 22 23 24 25 26	Lo		-				-	
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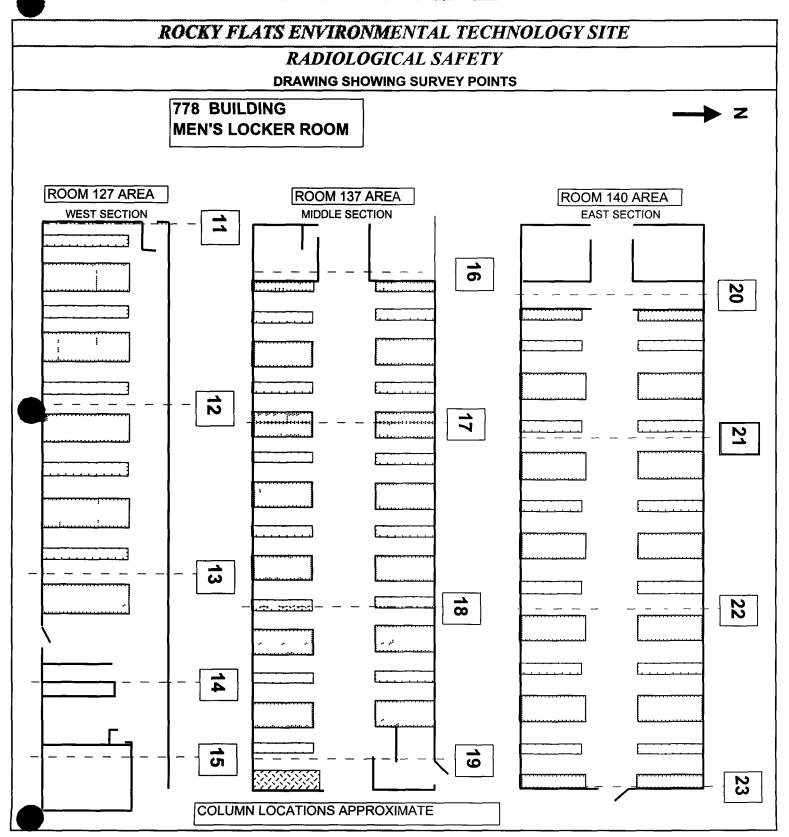
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	ROCK	I FLAT		VVI	RO	W.	ENTAL	TECH	HNOLO	GY SIT	E				
·c-	INSTRUMEN						I C	т	CONT		ELON				
ifg	Mfg	Mfg					Survey	Type	CONT	AMINAT	HON				
Model Serial#	Model Serial#	Mod Seria	lel				Building	<u> </u>							
Cal Due	Cal Due	— Sen	ai#				Location		naisanaa	Lovel Che	· wootowia	otion			
l ————		— Cai	Due				Purpose	Recon	naisance	Level Cha	iracteriz	auoi	<u> </u>		
Efficiency	Bkg						RWP#								
MDA		MD	ency				KWP#								
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Mfg	Mfg	Mfg					Date			''	_				-
Model	Model	Mod	lel				RCT			/			1	/	
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Bkg	Bkg						RCT			1			/	/	
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Date Reviewed	d	RS Supe	rvisio	n .			Print Nan	ne.		Sign	ature			/ Em	ıp #

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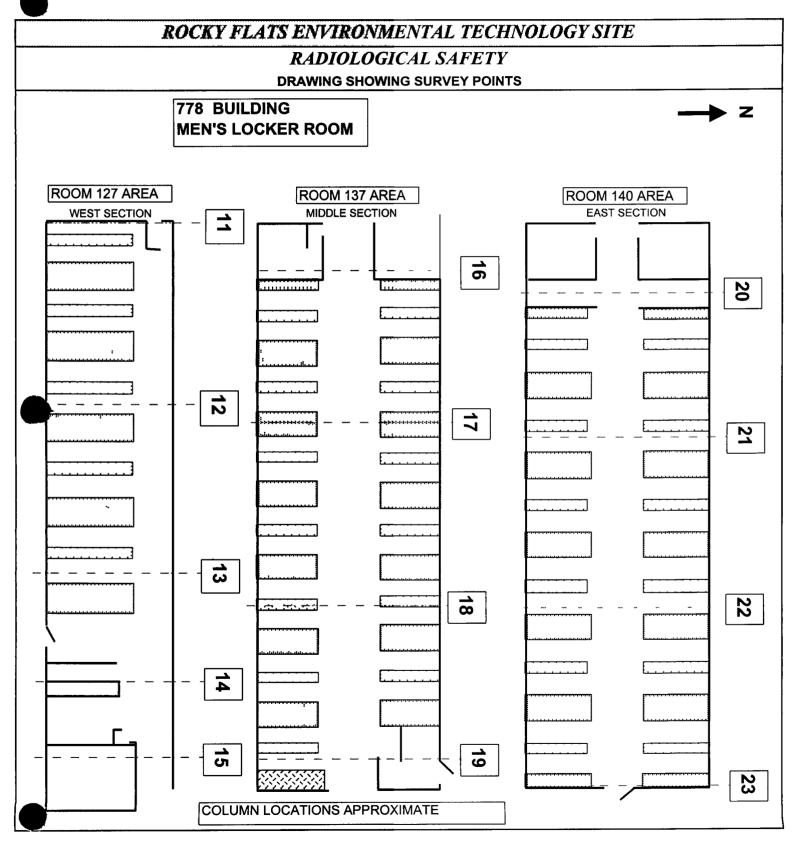


	INSTRUMEN		•••••				**			GY SITE				
afg	Mfg	_					Survey 7	Гуре	CONT	'AMINATIO	N			
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Efficiency	Efficiency	Effici	ency				RWP#							
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							Date			Time				-
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2 3 4 5 6 7							22 23 24 25 26 27							
2 3 4 5 6 7 8							22 23 24 25 26 27 28							
2 3 4 5 6 7 8							22 23 24 25 26 27 28 29							
2 3 4 5 6 7 8 9 10							22 23 24 25 26 27 28 29 30 31 32							
2 3 4 5 6 7 8 9 10 11 12							22 23 24 25 26 27 28 29 30 31 32 33							
2 3 4 5 6 7 8 9 10 11 12 13							22 23 24 25 26 27 28 29 30 31 32 33 34							
2 3 4 5 6 7 8 9 10 11 12 13 14							22 23 24 25 26 27 28 29 30 31 32 33 34							
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16							22 23 24 25 26 27 28 29 30 31 32 33 34 35 36							
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17							22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37							
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16							22 23 24 25 26 27 28 29 30 31 32 33 34 35 36							

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(Survey Area Pkg Page 33 of 33)

RS FORMS 07.02-01



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ENTAL TECHNOLOGY SITE

IN	SIKUMENI DAIA	
Ifg. Eberline	Mfg Eberline	Mfg. NeTech.
Model Sac-4	Model Sac-4	Model Electra
Serial #_846	Serial #_/270	Serial # 1518
Cal Due 8-15 00	Cal Due 4-12-00	Cal Due 6-29-00
Bkg ozcpm	Bkg O,O cpm	Bkg <u>0.0 cp m</u>

Cal Due 8-15 0 Bkg ozcom Bkg Olocom Efficiency 33% Efficiency, 2186 Efficiency 33% MDA 94 dem MDA 12.9 dam MDA 8.2 dem

Mfg Eberline Mfg. Eberline Model BC-4 Model BC-4 Serial #_833 Serial # 872 Cal Due <u>4-12-00</u> Cal Due <u>7-14-00</u>

Bkg 4/com Bkg <u>45cpm</u> Efficiency 25% Efficiency 25%

MDA 103,4 dam MDA 94 dam MDA 99.2 do m Comments Floor / Walls < 2 meters WBiased survey point

1 m² scans, 1 minute pats and swipes

Mfg. NE Tech Model Electra Serial # 3120 Cal Due <u>4-24-00</u>

Bkg 3.0 cam

Efficiency 12/09

See map for locations

Contamination Survey Type Building \$707 778 Location 778 Interior East Survey Area A Reconnaisance Level Characterization

RWP# 00 707 1204

Date 4-5-00 Time Days

SURVEY RESULTS

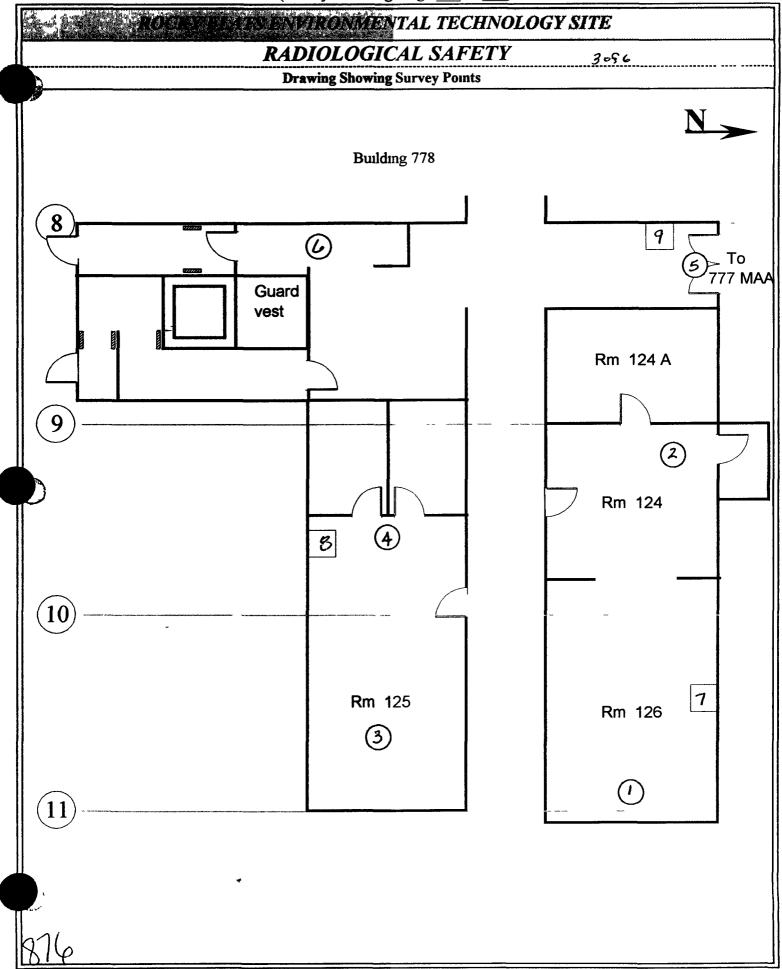
Swipe	Location\Description	Rem	ovable	Total	Swipe	Location\Description	Rem	ovable	Total
#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
\mathcal{I}_1	F	0	-12	24	16	Wallszm	3	-20	90
2	F	0	-20	18	17	F	٥	-8	48
3	F	0	- 4	12	18	F	6	-40	12
4	F	0	-40	18	19	F	0	160	0
5	F	0	36	12	20	F	o	4	12
6	F	3	-48	48	21	F	0	క	18
7	*Wall<2m	0	0	60	22	F	0	- 8	36
		0	-4	18	23	F	0	4	12
9	EWall < 2m Wall < 2m	0	36	18	24	F	0	4	36
10	F	3	0	24	25	F	3	-20	18
11	F	0	12	16	26	F	0	0	12
12	F	0	51	24	27	F	0	28	54
13	F	3	-20	66	28	F	0	-4	42
14	F.	0	32	18	29	F	(,	- 44	18
15	Wallsam	Ò	32	24	30	F	0	37	4

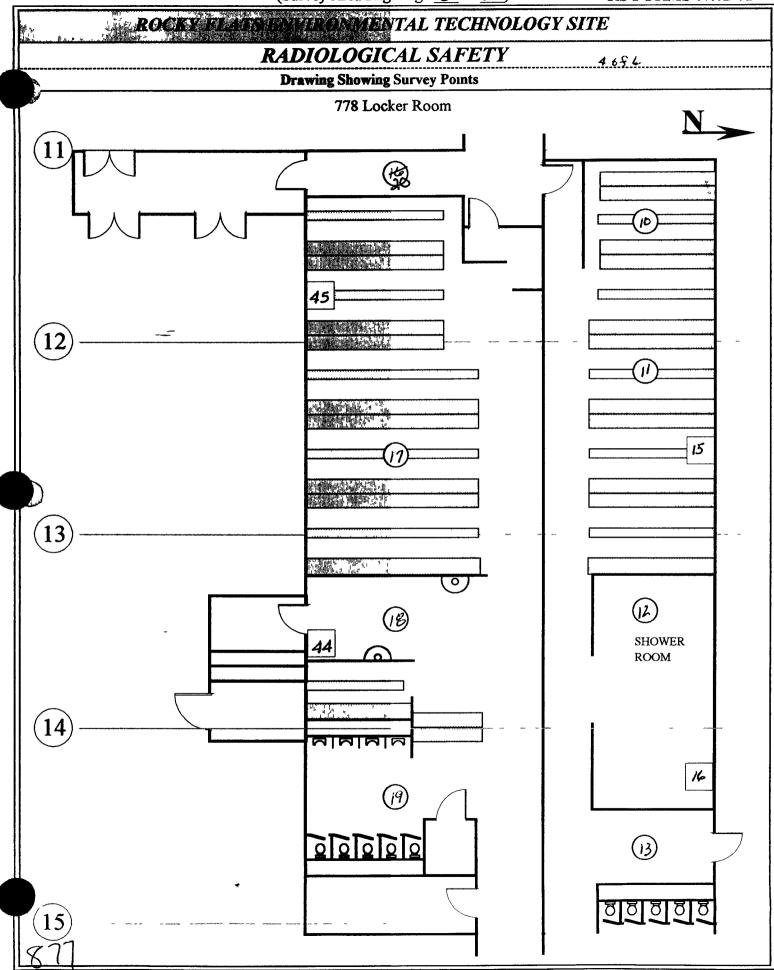
Date Reviewed: 4-17 00 RS Supervision.

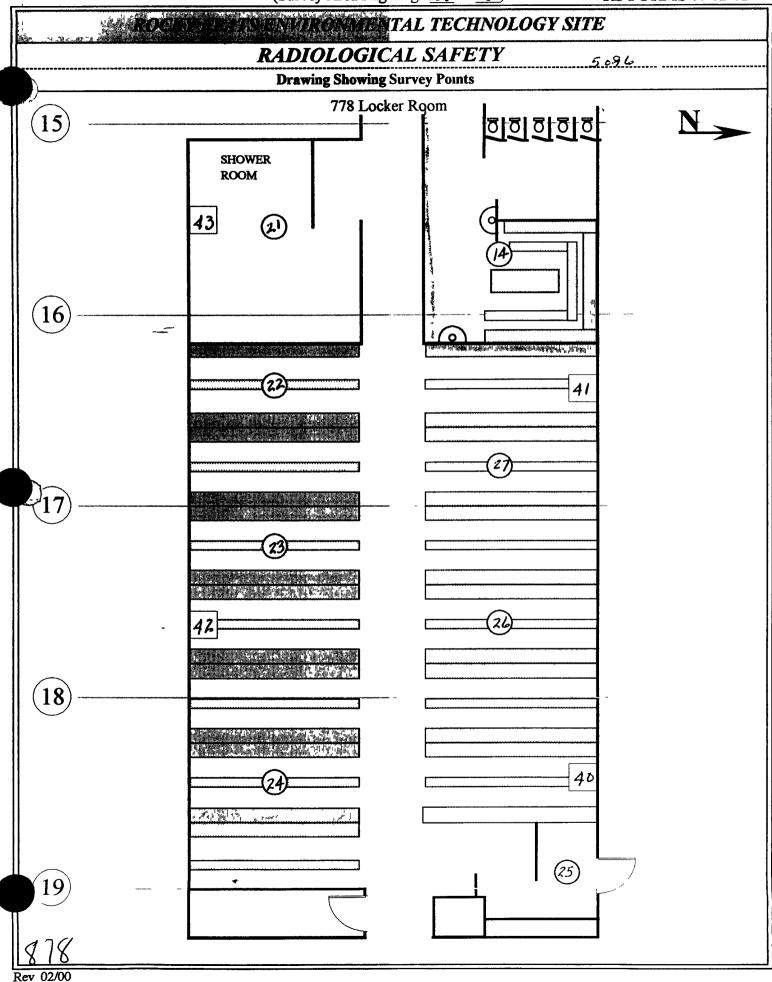
		(Sur	vey Ar	ea Pkg	Page	334 of 33 RS F	ORM:	S 07 02	2-01
	ROCKY FLATS	ENV	iron	IMEN	VTAL	TECHNOLOGY SITE			
	A TOTAL TO A TOTAL OF THE PROPERTY OF THE PROP	RAD	IOLO	OGIC	CAL	SAFETY 2696			
				******		y Points			T
Swipe #	Location\Description (Results in DPM/100cm ²)	Reme Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Alpha	ovable Beta	Total Alpha
31	F	0	8	/8	16				
32	F	0	-28	30	62				
33	F	0	32	42	63	K			
34	F	0	-48	18	64	K			
35	F	0	-48	30	65				
36	Wallsam	0	56	46	66				
37	Wall 12m	0	4	30	67				
38	Wall < Zm	0	8	18	68		ļ		
39	Wall<2m	3	-4	48	69				
40	Wall < 2m	0	-44	24	70				
41	Wall<2m	0	-48	18	71	\			
42	Wallzam	3	-4	12	72				
43	Wall<2m	Ö	-40	108	73				
144	Wallszm	٥	4	30	74				
45	Wall < Zm	٥	-20	24	75				
46	END OF SURVEY				76				
47	END OF SQUUEY				77				
48					78				
49					79				
50					80				
51					81				
52					82				
53					83				
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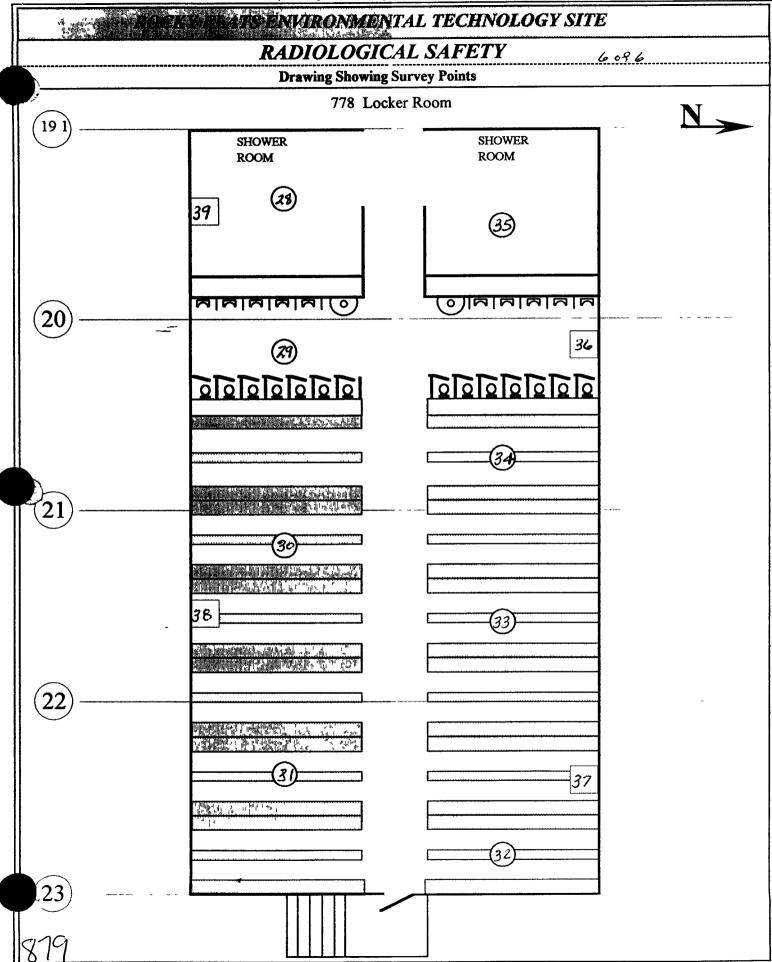
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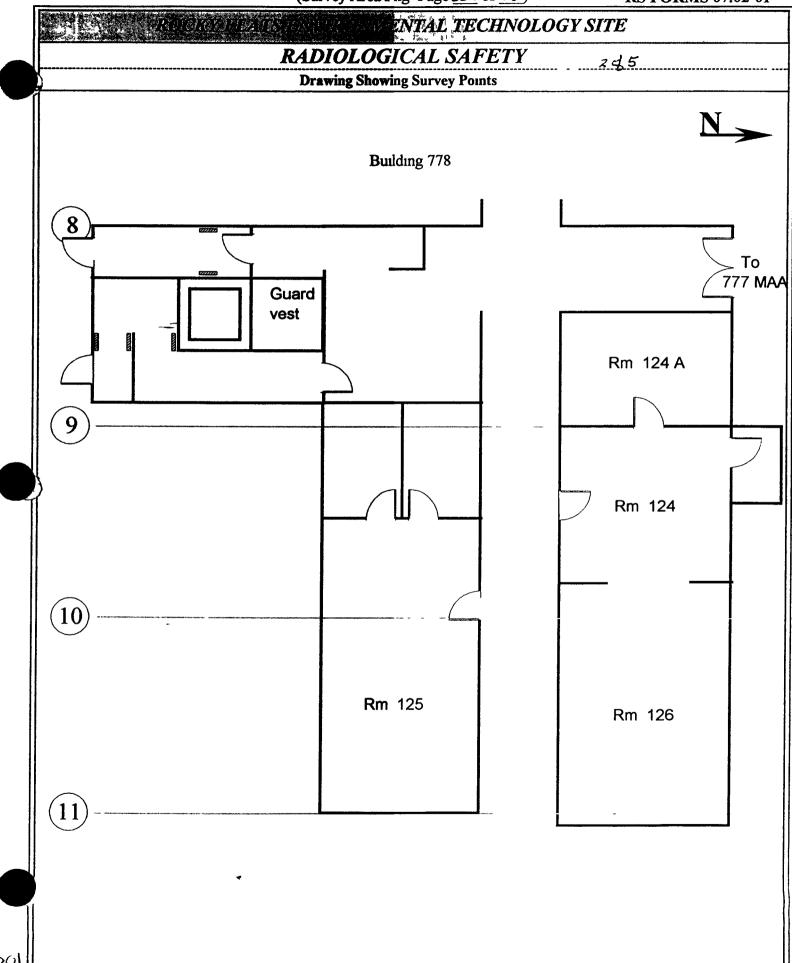


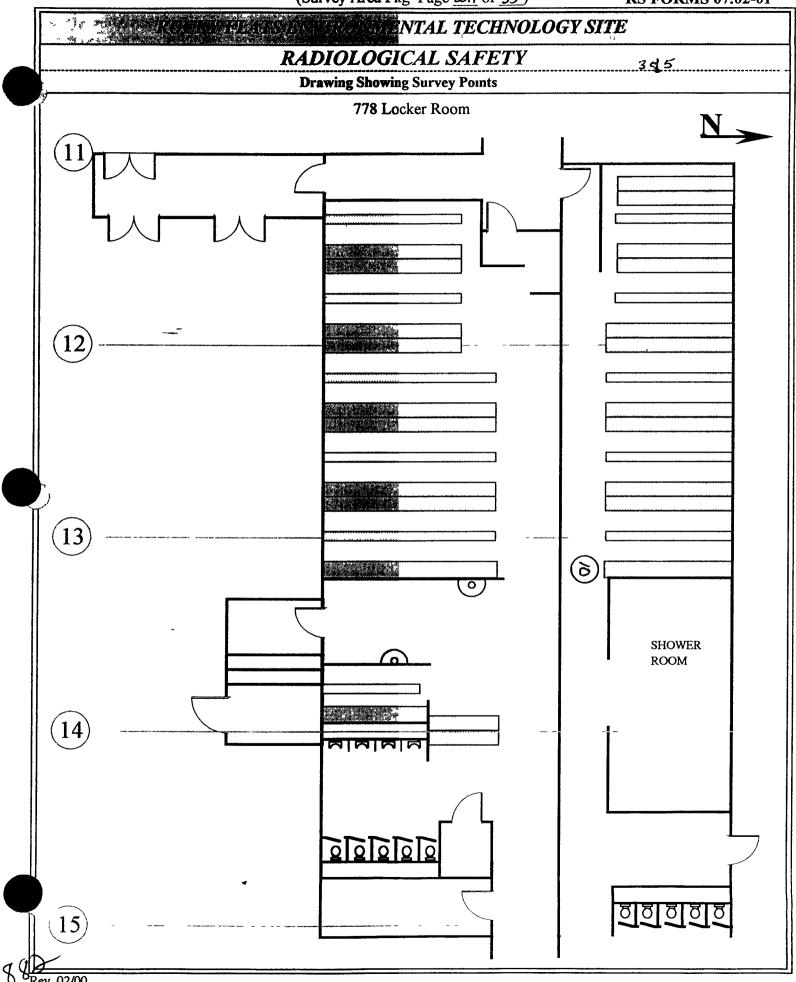
MENTAL TECHNOLOGY SITE **INSTRUMENT DATA** Contamination **Survey Type:** Mfg _ Eberline Mfg Eberline Mfg NeTech. Building 8708 778 Model Sac-4 Model Sac-4 Model Electra Survey Area A Senal # 846 Serial # 1270 Serial # /233 Location Interior East Reconnaisance Level Characterization Purpose Cal Due 8-15-00 Cal Due <u>4-12-00</u> Cal Due <u>5-11-00</u> Bkg Zocom Bkg. O.Z Com Bkg O.O Com RWP# 06707 1204 Efficiency 33% Efficiency 33% Efficiency , 2663 MDA 8,2 dem MDA 94 dam MDA 12.9 dpm Date 4-7-00 Time Days Eberline Mfg Mfg Eberline Mfg Model BC-4 Model BC-4 Model Serial # 872 Serial #_// Serial #_833 Cal Duc 4-12-06 Cal Due Cal Duc 7-14 00 Bkg Bkg. 38 Com Bkg 43cpm Efficiency Efficiency 25% Efficiency 25% Print name // //Signature MØA MDA 95.9 dem MDA 101.3 DPM Comments Floor / Walls < 2 meters Biased survey points 145 1 m² scans, 1 minute pats and swipes See map for locations

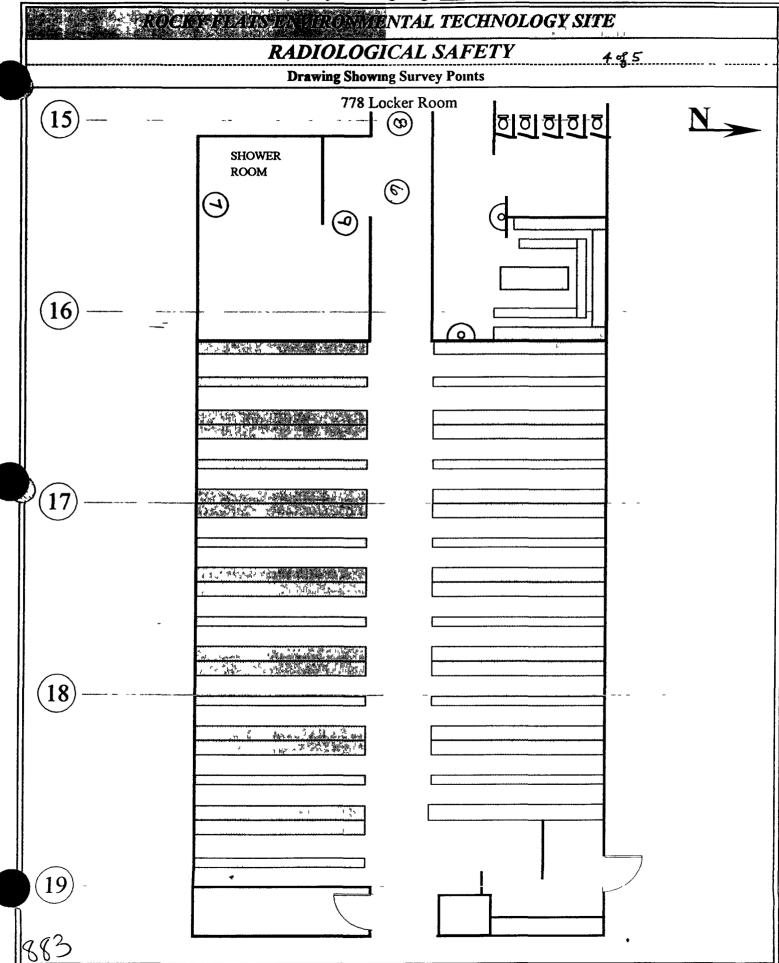
SURVEY RESULT	ГS	LT	IП	ES	R	ÆY	7	JR	SI	
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wipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha		Total Alpha	Total Beta	Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	ovable Beta	Total Alpha	Total Beta
1	F Drain	0	36	18	NA	16.					
2	11 11	6	-24	18	HA	17	₹2				
3	p n	0	40	12	NA	18					
4	h ji	0	-44	0	NA	19					
5	11 11 -	0	32	Ó	NA	20					
6	11 /1	0	-24	0	NA	21					
7	ון עו	O	44	6.	NA	22					
8	D II	0	-28	18	NA	23					
9	ון וכ	0	4	18	NA	24					
10	11 11	٥	-28	18	NA	25					
11	Ka Endo	f Su	ney			26					
12			J			27					
13						28					
14		,				29					
15						30					
	# 1 2 3 4 5 6 7 8 9 10 11 12 13	# (Results in DPM/100cm ²) 1	# (Results in DPM/100cm²) Alpha 1	# (Results in DPM/100cm²) Alpha Beta 1	# (Results in DPM/100cm²) Alpha Beta Alpha 1	# (Results in DPM/100cm²) Alpha Beta Alpha Beta 1	# (Results in DPM/100cm²) Alpha Beta Alpha Beta # 1	# (Results in DPM/100cm²) Alpha Beta Alpha Beta # (Results in DPM/100cm²) 1 F Abain	# (Results in DPM/100cm²) Alpha Beta Alpha Beta # (Results in DPM/100cm²) Alpha 1	# (Results in DPM/100cm²) Alpha Beta Alpha Beta 1	

Date Reviewed: 4-17 00 RS Supervision







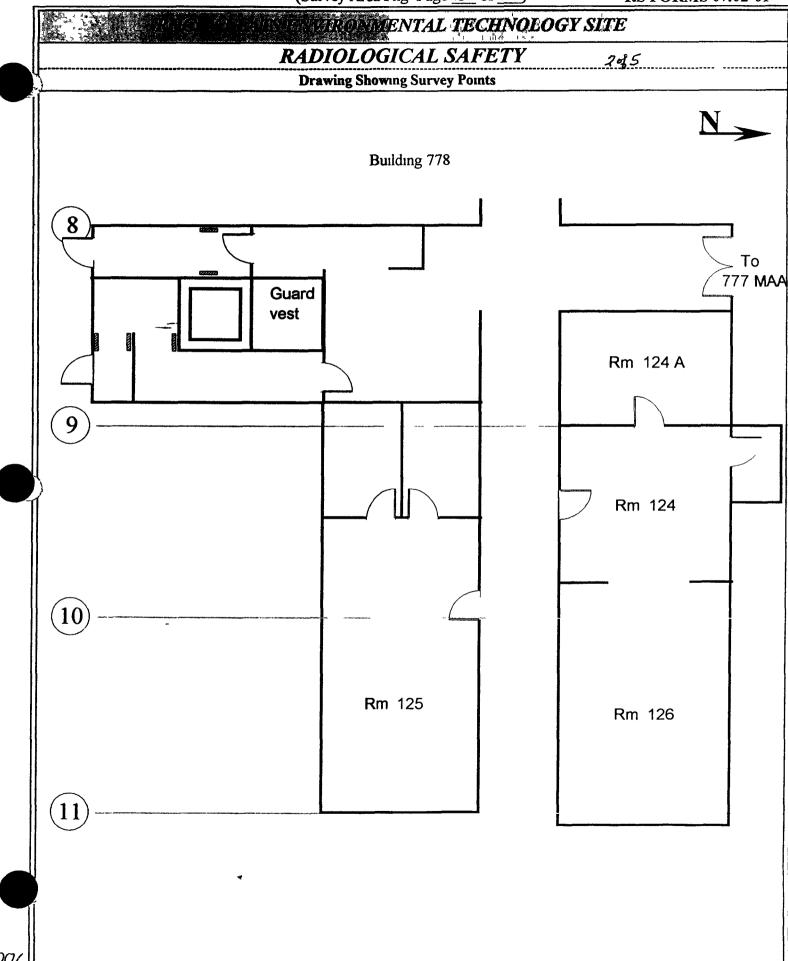
	*	ICAL SAFETY ng Survey Points	<u>5 g 5</u>
	778 Lo	ocker Room	N
(191)	SHOWER ROOM	SHOWER ROOM	
20	(4)	্যানানান	
	<u> </u>		<u> </u>
(21)			
22)			
	, H. 2. 1 L. 1 L. 1 L. 1 L. 1 L. 1 L. 1 L.		
23)			

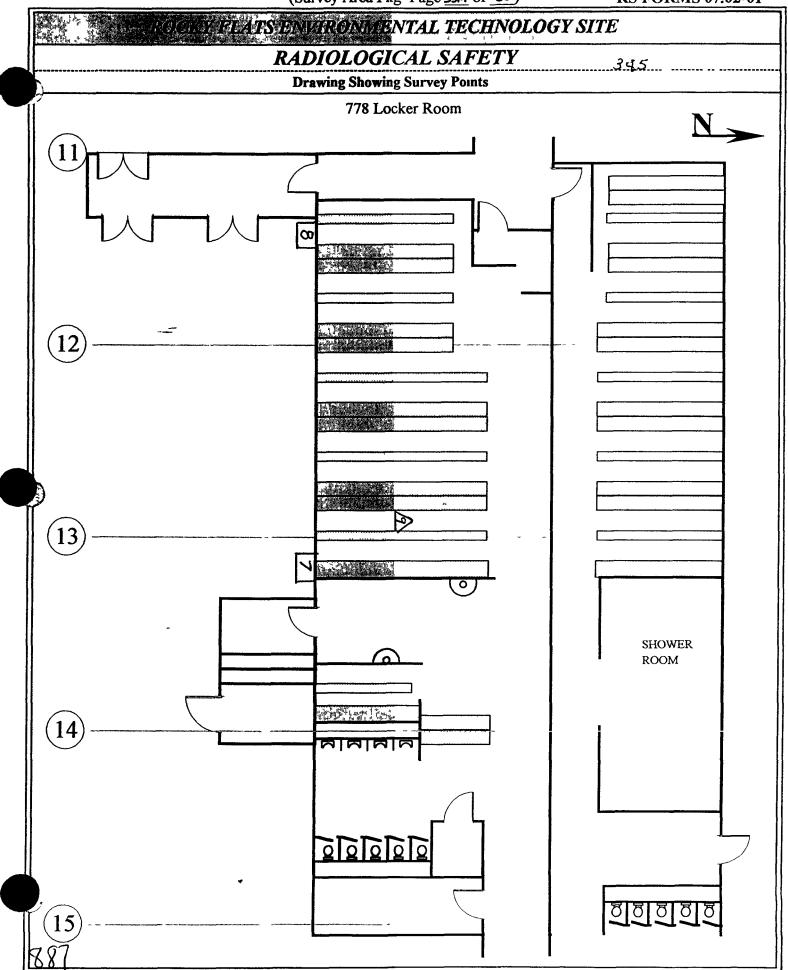
		(Survey A	rea Pi	kg Pag	ge <u>336</u> 01 <u>-</u>	KS KS	FORMS 07.0	12-01
i e	ROLL		МЕ	ENTA	L TECH	NOLOGY SITE	,	
	INSTRUMENT DATA	A	••••			C		
Mfg Eberline	Mfg Eberline	Mfg NeTect	<u>1</u>	Surve	y Type	Contamination		
Model Sac-4	Model Sac-4	Model Electra		Buildir	ng PL 707	778		
	Serial #_1276			Locatio		tion East		
	O Cal Due 4-12 00	_		Purpos	e Recor	nnaisance Level C	haracterizati	on
Bkg O.O cpm								
	Efficiency 33%			RWP	# 00 70	7 1204		
MDA 8.2 da		•						
<u></u>	41		444	Date	4 7-60	Time 🗘	Days	
MfgEberline	Mfg Eberline	Mfg					•	
Model BC-4	Model BC-4	Model		RC	^	06.60		
Serial #_872	Serial #833	Serial #/	A					
	00 Cal Due 7-14-00							
1	Bkg. 43 com			RC7				
	6 Efficiency 25%	Efficiency		KC.				
	em MDA 101.3 da	m MDA		_				
	eiling / Walls > 2 mete		vey p	oints		/ ર્લ્ડ		
1	s and swipes See m						-	

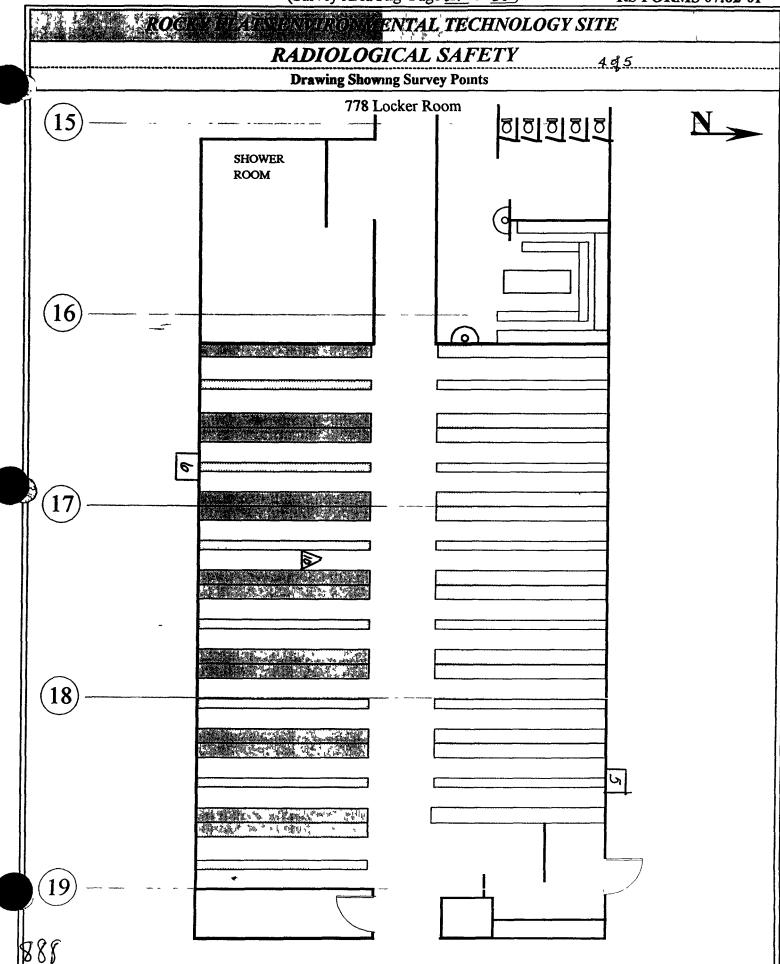
		SURV	ÆY F	RESUL	<u>TS</u>			
Swipe Location\	Description	Removable 7	otal	Swipe	Location\De	escription	Removable	Toal

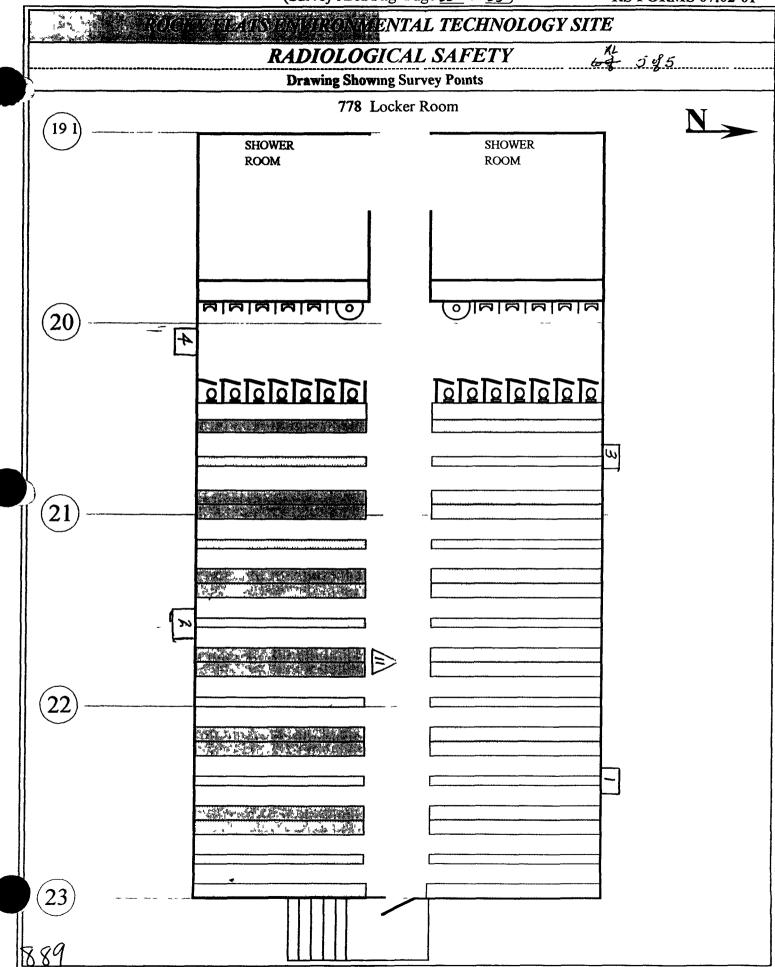
Swipe	Location\Description_		ovable	Total	Swipe	Location\Description		ovable	Toal
#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
1	Wall7 Zm	0	-8	18	16				
2	11 11	0	4	12	17	¥			
3	n n	0	36	12	18	×			
4	11 11	O	-44	30	19				
5	η μ.	0	-24	24	20				
6	j1 ji	0	20	12	21				
7	ν ,,	0	-8	18	22				
8	71 1	0	-12	0	23				
9	Ceiling	0	-28	24	24				
10	Ceiling Ceiling Ceiling	0	8	٥	25				
11	Ceiling	0	20	24	26				
12	sud of S	wun			27				
13		ک			28				
14	•				29				
15					30				

Date Reviewed 4-17:00 RS Supervision

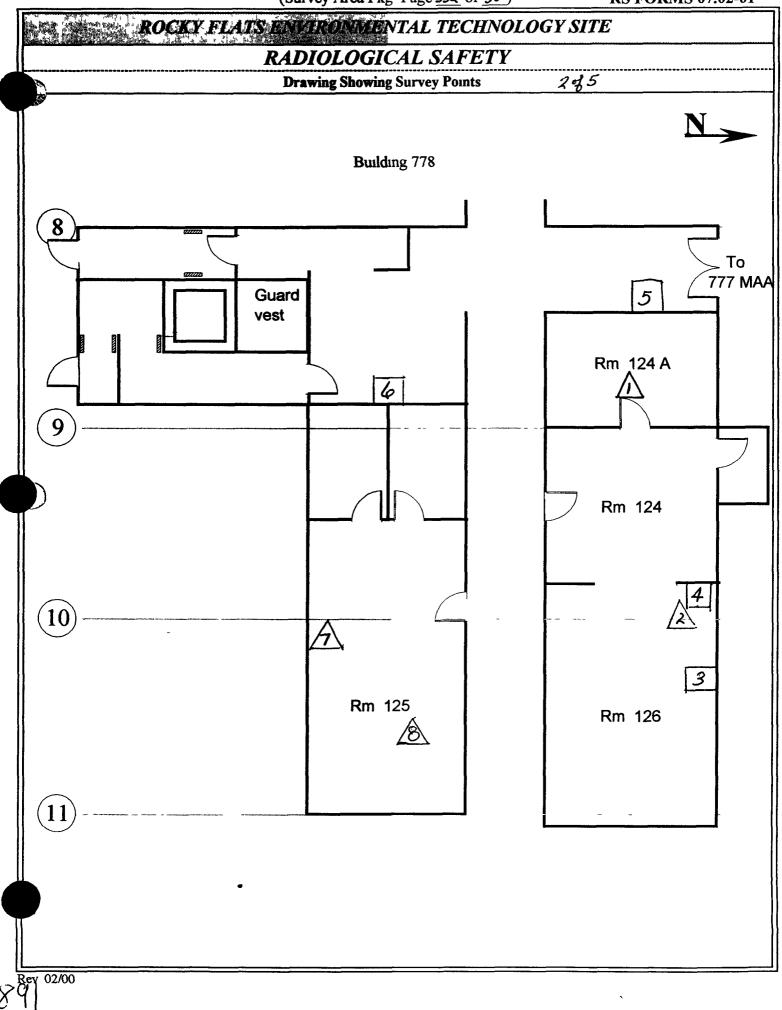


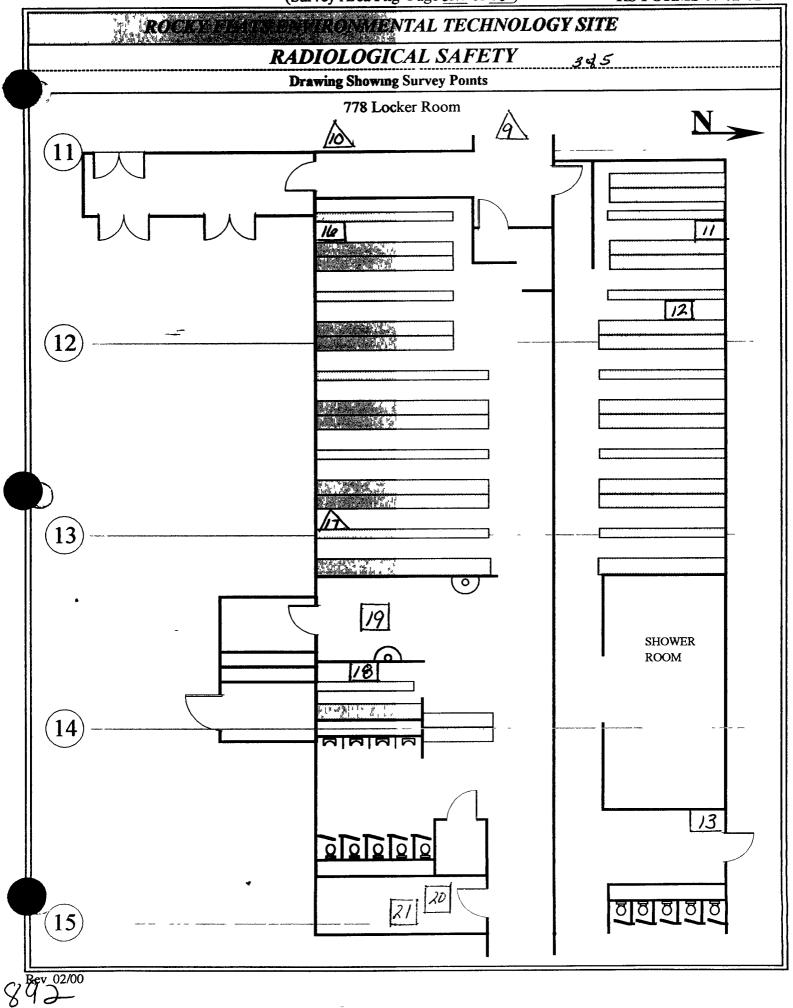


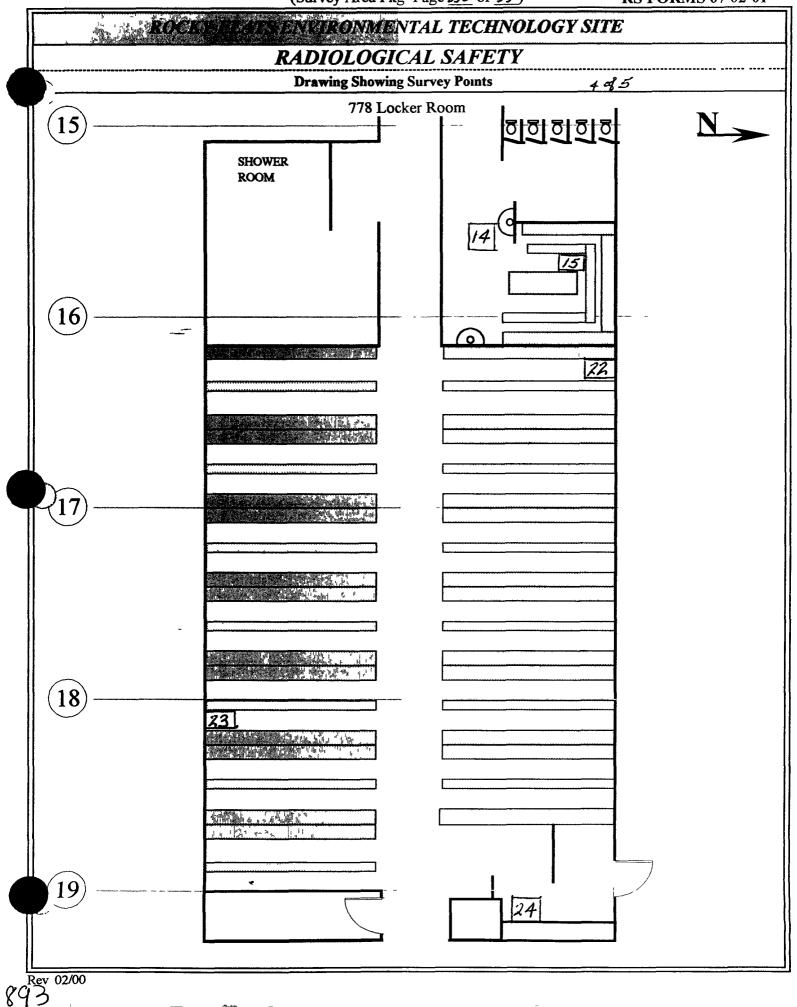


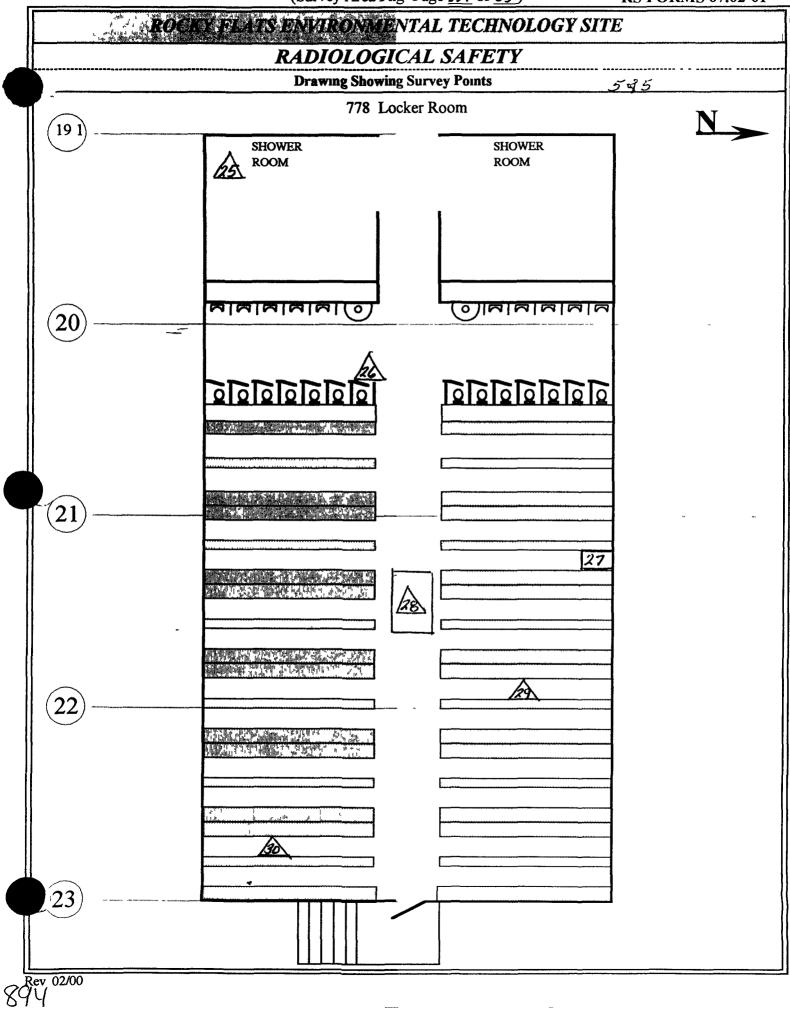


(Survey Area Pkg Page 35P of 35) RS FORMS 07.02-01								
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE								
INSTRUMENT DATA Mfg Eberling Mfg NeTech Survey Type Contamination								
ffg Eberline Mfg E		g <u>NeT</u>			C) A)PC	- 		
Model Sac-4 Model S		del Elec		Build	——————————————————————————————————————	Cur	vey Are	. Δ
		nal # <u>/</u> 6			101 East Interior Reconnaisance Level C			
Cal Due 8 15.00 Cal Due 1	4 /2 00 Ca	g $\frac{\partial \omega}{\partial x}$	77 00	Purpose Reconnaisance Level Characterization				
Bkg <u>0.2 cρ</u> Bkg <u>0</u> Efficiency 33% Efficiency		iciency.		RW	P# 00 707 1204			
MDA /2.9 /. MDA 8								j
West your appropriate the second	MDA 12.9 dan MDA 82 dan MDA 94 dan Date 4-11-00 Time Days							
Mfg <u>Eberline</u> Mfg <u>Et</u>		g <i>NE</i>						
Model BC-4 Model F		odel <u>Glea</u>						
Senal # 872 Senal #_	•	ر # lair						
Cal Due 4/2-00 Cal Due Dra 3/2		1 Due <u>7</u>						
	cpm Bk					-, -		
Efficiency 25% Efficiency MDA 102 4 dem MDA 93		iciency_			Print name / Signatur	e	/ Emp) #
Comments Equipment Br			407	1				
1 minute pats and swipes			ากร		145		-	
- I minute pars and swipes	occ map to	· iocaul	7110		, , , ,			
SURVEY RESULTS								
Swipe Location\Description		novable	Total	Swipe	Location\Description		ovable	Total
# (Results in DPM/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
1 Certing Vent	0	-4	12	16	HEATER WAY Mount	0	0	18
2 Ceiling Vent	0	4	84	17	Vent Ceiling	3	-28	60
3 WALL VENT	0	-40	30	18	Sink	0	12	30
4 Electrical Box	0	32	12	19	HEATER	0	28	48
5 Steel Beam	0	-8	18	20	Pump	0	-4	30
6 Steel Beam	0	12	24	21	Flangeon Steam TANK	0	-20	/ユ
7 Ceiling Vent	3_	-8	114	22	COLD WATER PIPING	0	-16	18
8 Ceiling Vent	0	0	18	23	HEATER WALL MOUNT	3	4	36
9 Ceiling Vent	0	-48	18	24	J1B-19 Glecteren lox	0	-4	18
10 Cesting Vent	0	64	174	25	Vant Cailing Shower	0	28	42
11 Vent War by Lan	ter 0	28	12	26	Vent Ceiling	<i>D</i> _	-8	48
12 Bottom of Locker #	3/3	24	24	27	WALL Electrical Panel	0	0	42
13 Vant by Side do	oon O	-12	90	28	Pur down Stair Steps	0	12	36
14 Sink	. 0	8	36	29	Ceiling Vent	0	24	30
15 LOCKER # 941	٥	-24	12	30	Ceiling Vent	0	E	60
Date Reviewed. 4 17 00 RS Supervision.								
Print Name Signature Emp #								









SURVEY PACKAGE TRACKING FORM

Package ID: 2000-0002		Building (707) 778 INTERIOR WEST			
Survey Area. B		Survey Unit N/A			
Initiator/ Date	Release Date	Validation Date	Closure Date		
9/ 2/24/00	9/3/19/00	& 5/2/00	d 5/2/00		

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 2000-0002		Building (707) 778 INTERIOR WEST		Type 2	Type 2		
Survey Area B		Survey Unit N/A		Area (m²) 1233			
APPROXIMATELY VESTIBULE THE	Survey Unit Description INTERIOR OF BUILDING 778 (WEST) AREA EXTENDS WEST FROM COLUMN 8 TO APPROXIMATELY COLUMN 7W IN ROOM 100 (COLUMN 8 IS LOCATED JUST WEST OF 707 MAA GUARD VESTIBULE THE MAJORITY OF THIS AREA IS NOT-RADIOLOGICALLY POSTED BUT INCLUDES A RADIOACTIVE MATERIAL AREA IN OLD LAUNDRY AREA						
Survey Type			Classification				
RLC Survey X	FSS □		Class 1 □ Clas	s 2 🗆 Class 3 🗆	Unknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
56	31	30	0	0	66		
Building		Type·		Survey Area			
Survey Unit		· · · · · · · · · · · · · · · · · · ·	Area (m²)				
Survey Unit Desc	cription						
Survey Type		· · · · · · · · · · · · · · · · · · ·	Classification				
RLC Survey □	FSS □		Class 1 □ Clas	s 2 🗆 Class 3 🗆	Unknown 🗆		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building Type		Survey Area					
Survey Unit			Area (m²)				
Survey Unit Description							
Survey Type			Classification				
RLC Survey □	FSS □		Class 1 🗖 Clas	s 2 🗖 Class 3 🗖	Unknown 🗖		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
				i			
Building Type		Туре	Гуре Sur		Survey Area		
Survey Unit		Area (m²)					
Survey Unit Description							
Survey Type			Classification				
RLC Survey □	FSS □		Class 1 □ Clas	s 2 🗆 Class 3 🗆 🗎	Unknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		

SURVEY PACKAGE COVER SHEET

Package ID: 2000-0002	Building (707) 778 INTERIOR WEST		
Survey Area: B	Survey Unit N/A		
Survey Unit Description: Interior of Building 778 (WEST) AREA EXTENDS WEST FROM COLUMN 8 TO APPROXIMATELY COLUMN 7W IN ROOM 100 (COLUMN 8 IS LOCATED JUST WEST OF 707 MAA GUARD VESTIBULE THE MAJORITY OF THIS AREA IS NOT-RADIOLOGICALLY POSTED BUT DOES INCLUDE A RADIOACTIVE MATERIAL AREA IN OLD LAUNDRY AREA			
Building Information:			
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey 🗆		
Building Type Type 1 □ Type 2 X Type 3 □			
Classification Class 1 🗆 Class 2 🗖 Class 3 🗖 Un	known X		
Contaminants of Concern Plutonium X Uranium X O	ther 🗆		
Justification for Classification: N/A			
Special Support Requirements: Ladder, manli instrumentation may be required for access into			
Special Safety Precautions: Access to overhead additional controls or approvals from security made	· · · · · · · · · · · · · · · · · · ·		
Isolation Controls:			
Level 1 🗆 Level 2 🗖 N/A X			
Labeling Requirements: NONE			
Survey Package Implementation:			
	2/2/20		
	Date		
	N/A		
	Date		
	3/1/0		
	<u>Date</u>		
5/2/00			
	Date		
	N/A		
	5/4/00		
	Date		

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID: 2000-0002	Building (707) 778 INTERIOR WEST	
Survey Area B	Survey Unit N/A	
Survey Unit Description. Interior of Building 778 (WEST) AREA EXTENDS WEST FROM COLUMN 8 TO APPROXIMATELY COLUMN 7W IN ROOM 100 (COLUMN 8 IS LOCATED JUST WEST OF 707 MAA GUARD VESTIBULE THE		

Survey Unit Description. Interior of Building 778 (WEST) AREA EXTENDS WEST FROM COLUMN 8 TO APPROXIMATELY COLUMN 7W IN ROOM 100 (COLUMN 8 IS LOCATED JUST WEST OF 707 MAA GUARD VESTIBULE THE MAJORITY OF THIS AREA IS NOT-RADIOLOGICALLY POSTED BUT DOES INCLUDE A RADIOACTIVE MATERIAL AREA IN OLD LAUNDRY AREA

Minimum Survey/Sampling Measurement Requirements				
Measurement	Number and Type	Comments		
Surface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1		
Measurements	56 <u>uniformly distributed</u> survey points as	SEE NOTE 2		
	follows - 4 points total per each column section with	SEE NOTE 3		
	- 4 points total per each column section with 2 points on walls, 2 points on floors alternating wall points between North and South half/rooms in each column section (52 points total for ~13 column sections)	SEE NOTE 4		
	- 2 points on floor of room 104A (plenum area)	(NOTE Column spacing is approximately eve 20 feet Where carpeting is present on floors a cannot be lifted for surveys, take additional wa		
	- 2 points on 2 different walls in room 104A (plenum area)	surveys in lieu of floor surveys)		
	10 biased survey points at areas such as			
	- floor drains			
	- beneath equipment which has history of potential contamination			
	- Areas that are potentially contaminated based on past history/use based upon RCT judgement			
	CEILINGS/WALLS > 2 meters			
	21 <u>biased</u> surveys of ceilings and walls > 2 meters as follows			
	- 1 point per wall > 2 meters for each column sections (~13 points total) alternating between North and South walls/rooms			
	- 6 ceiling points (above and below dropped ceilings where present)			
	- 1 point in room 104A (plenum) on ceiling, 1 point on wall>2m in 104A			
	EQUIPMENT			
	30 <u>biased</u> survey points on equipment based on RCT judgement			

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID · 2000-0002	Building (707) 778 INTERIOR WEST
Survey Area. B	Survey Unit N/A

Survey Unit Description* Interior of Building 778 (West) Area extends West from Column 8 to Approximately Column 7w in Room 100 (Column 8 is located just West of 707 maa guard Vestibule the Majority of this area is not-radiologically posted but does include a radioactive material area in Old Laundry area

Minimum Survey/Sampling Measurement Requirements				
Measurement	Number and Type	Comments		
Surface Scanning	FLOORS/WALLS < 2 meters 66 1 m² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted CEILINGS/WALLS > 2 meters. NONE EQUIPMENT. NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4		
Media Samples	NONE	SEE NOTE 5		
Volumetric Samples	NONE			
Isotopic Gamma Scans	NONE			

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SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 2000-0002	Building (707) 778 INTERIOR WEST
Survey Area: B	Survey Unit N/A

Survey Unit Description: Interior of Building 778 (WEST) AREA EXTENDS WEST FROM COLUMN 8 TO APPROXIMATELY COLUMN 7W IN ROOM 100 (COLUMN 8 IS LOCATED JUST WEST OF 707 MAA GUARD VESTIBULE THE MAJORITY OF THIS AREA IS NOT-RADIOLOGICALLY POSTED BUT DOES INCLUDE A RADIOACTIVE MATERIAL AREA IN OLD LAUNDRY AREA

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4. Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 2000-0002	Building (707) 778 INTERIOR WEST
Survey Area: B	Survey Unit N/A

Survey Unit Description: . Interior of Building 778 (West) Area extends west from Column 8 to Approximately Column 7w in Room 100 (Column 8 is located just west of 707 maa guard vestibule the Majority of this area is not-radiologically posted but includes a radioactive material area in old Laundry area

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- 2 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 3 If during the performance of $1m^2$ scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The highest "elevated reading" PAT measurement found in the $1m^2$ scan area will be documented. Swipe measurements will be collected at the elevated reading location as well
- 4 If during the performance of $1m^2$ scan surveys a significant instrument response (e.g., elevated reading) is not noted, fixed (PAT) measurements and swipes will be taken from the lower left hand corner of the $1m^2$ scan area to maintain consistency in sample point locations
- 5 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- 7 Where not already indicated assure that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e g, indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc)

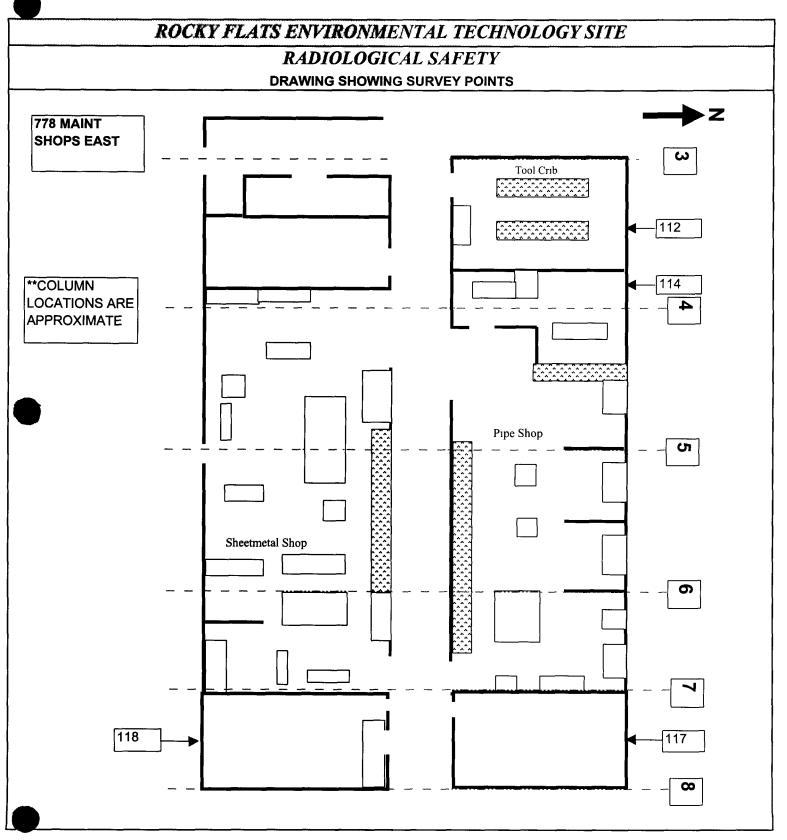
SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID·	2000-0002	Building (707)	778 INTERIOR V	VEST
urvey Area	. B	Survey Unit N	/A	
Change #	Description	1	Initiator/ Date	PRE
1	REPLACED PS 10-33 W/P	gs 10-26	d 5/2/00	ABS
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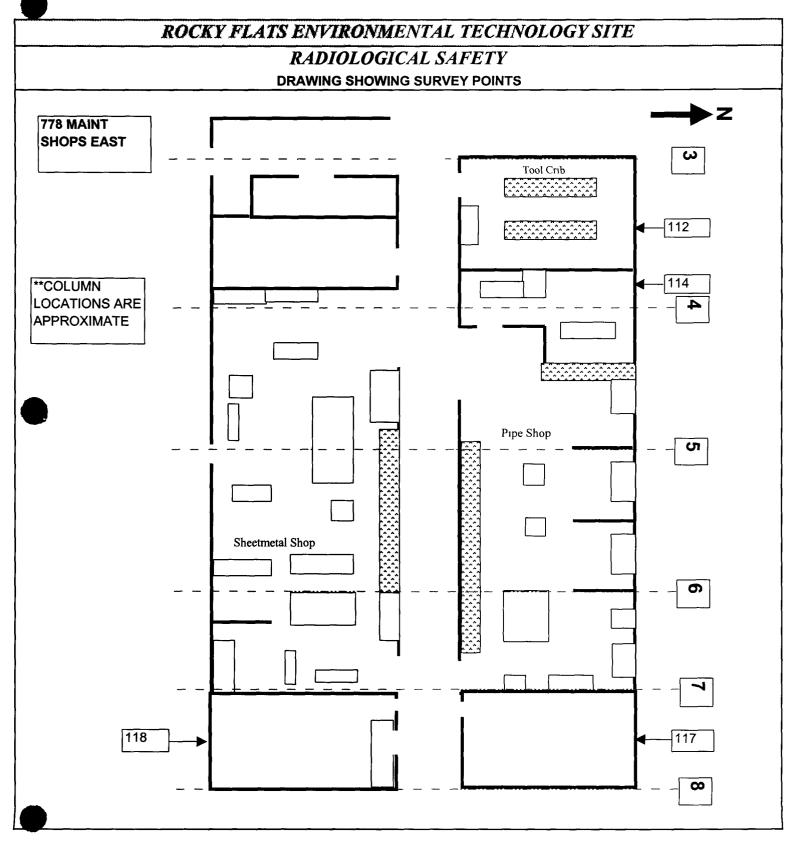
SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 2000-0002	Bu	ıldıng (707) 778 INTER	RIOR WEST
Survey Area: B	Sui	rvey Unit N/A	
Survey Type: Reconnaissance Level Characterizati	on Surve	y X Final Status Surve	у 🗆
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys		J	ds-
Total Activity Surveys		J	<u>A</u>
Exposure Rate Surveys		NA	NA
Removable Surveys		1	b
Media Samples		NA	NA
Volumetric Samples		NA	NA
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys		1	d-
Total Activity Surveys		1	d-
Exposure Rate Surveys		NA	NA
Removable Surveys		1	do
Media Samples		NA	NA
Volumetric Samples		NA	NA
Comments		· · · · · · · · · · · · · · · · · · ·	
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			Date

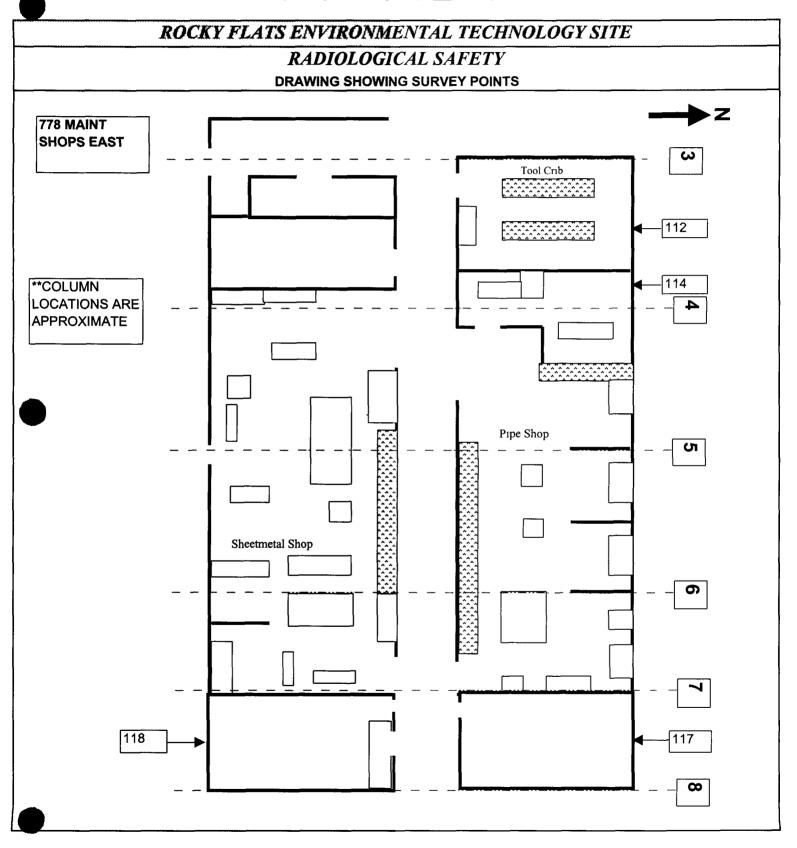
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	INSTRUMEN												
.fg	Mfg	Mfg							_	NTAMINATION			
Model	Model	Mod	lel				Buıldı	ng					
Serial#	Serial#	Seria					Locati	on					
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Bkg	Bkg												
Efficiency		Effici	ency				RWP :	[‡]					
MDA	MDA	MD.	A										
							Date			Time			-
Mfg	Mfg												
Model	Model	Mod	_				RCT_						
Senal#	Senal#		al#					Pri	int name	Sign	ature	Em	ip #
Cal Due	Cal Due		Due_									,	
Bkg	Bkg						RCT_						
Efficiency			ency					Pri	int name	Sign	ature	Em	ıp ‡
MDA	MDA	MD.	<u> </u>				<u> </u>						
	Location/Description		Pome	S vable		/EY	RESU Point	LTS	Location/I	Description	Removable	Dı	rect
unt ‡	(Results in DPM/100CM ²)		-		Alpha		#			PM/100CM ²)	Alpha Beta		
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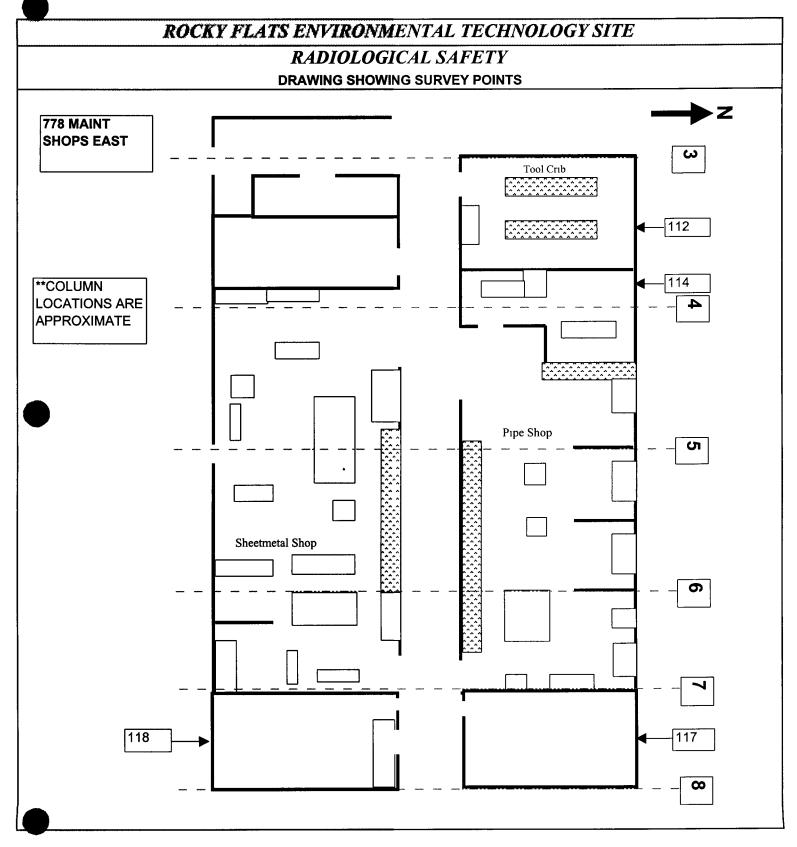
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	INSTRUMEN													
fg	Mfg	Mfg					Surv	ey Type _	CONT	AMINATIO	ON			
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Cal Due	Cal Due	Cal 1	Due				Purpo	se Recor	naisance l	Level Chara	cterizatio	n		
Bkg	Bkg	Bkg												
Efficiency	Efficiency						RWP	#						
MDA	MDA	MD	A											
							Date			Tıme	;			
Mfg	Mfg	Mfg								<u> </u>				•
Model	Model	Mod	lel				RCT			/			/	
Serial#	Serial#	Seria	al#				_	Prin	t name	Sış	gnature		Em	p #
Cal Due	Cal Due	Cal l	Due											
Bkg	Bkg	Bkg					RCT			/			/	
Efficiency	Efficiency	Efficie						Prin	t name	Sış	gnature		Em	ıp #
MDA	MDA	MD.	A											
					_		RESI							
	Location/Description Results in DPM/100CM ²)			vable	Dır	_	Point		ocation/Des		Remo			rect
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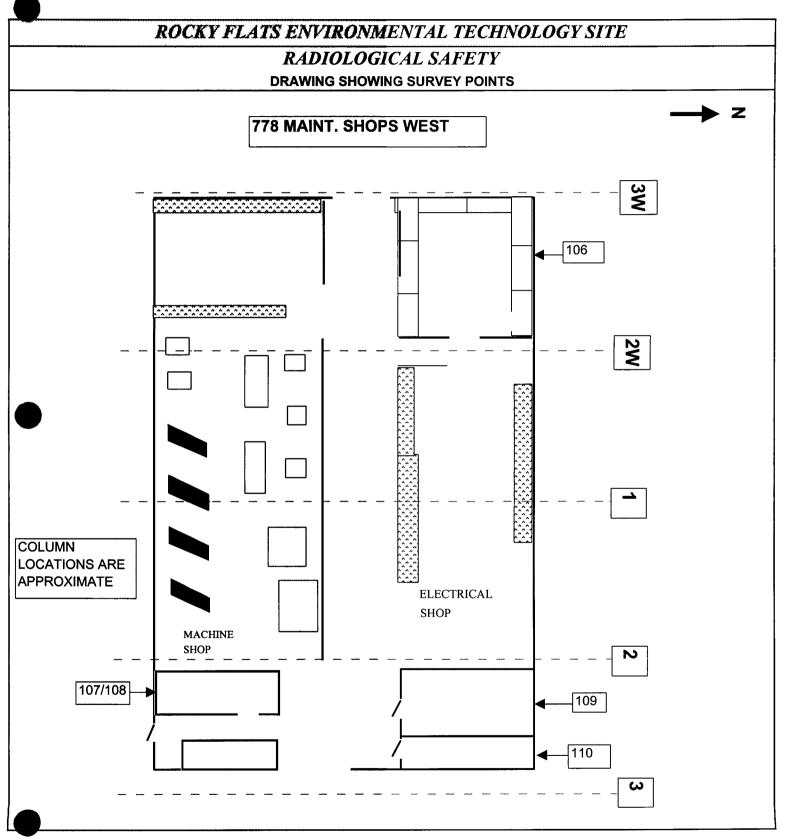
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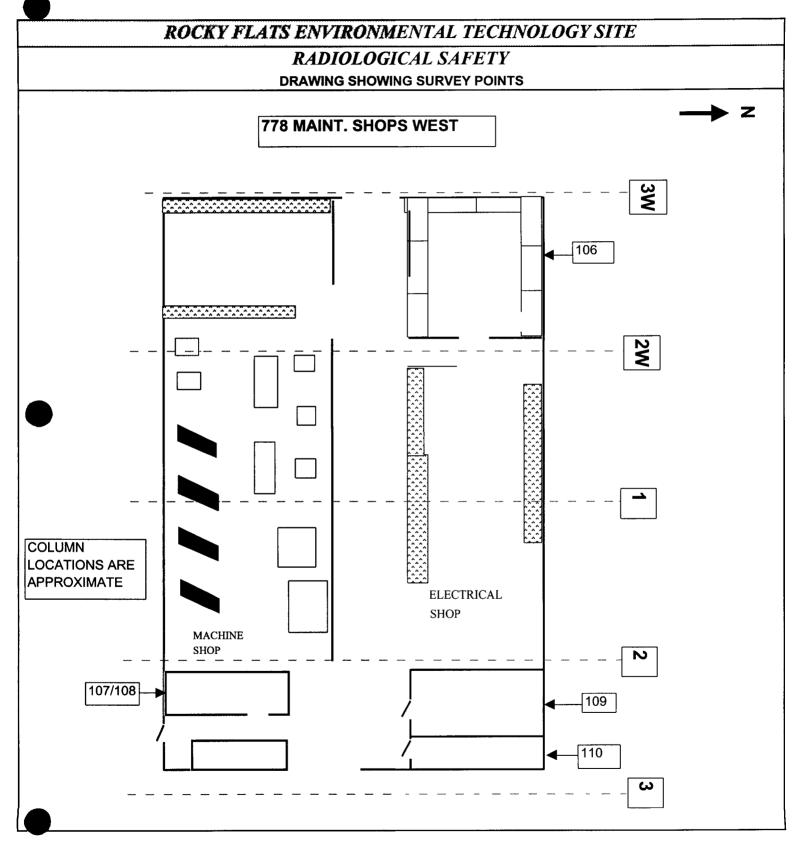
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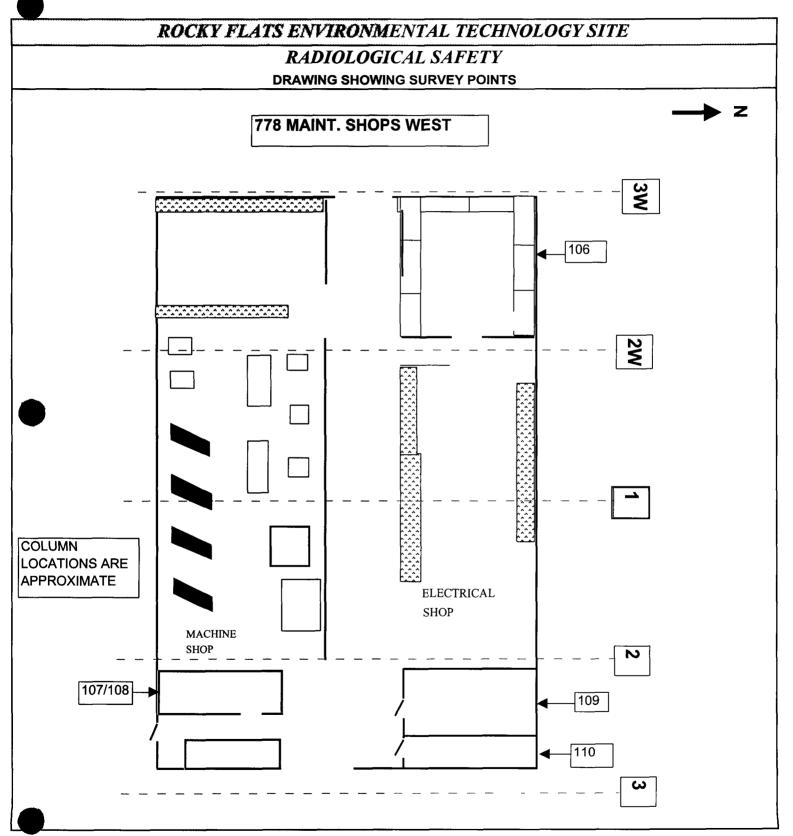
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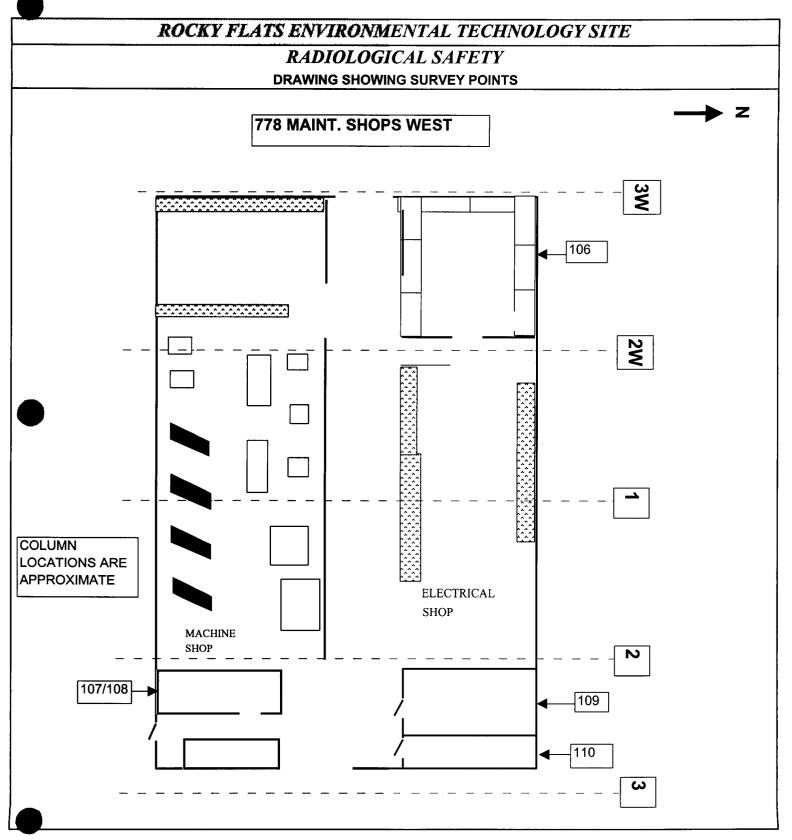
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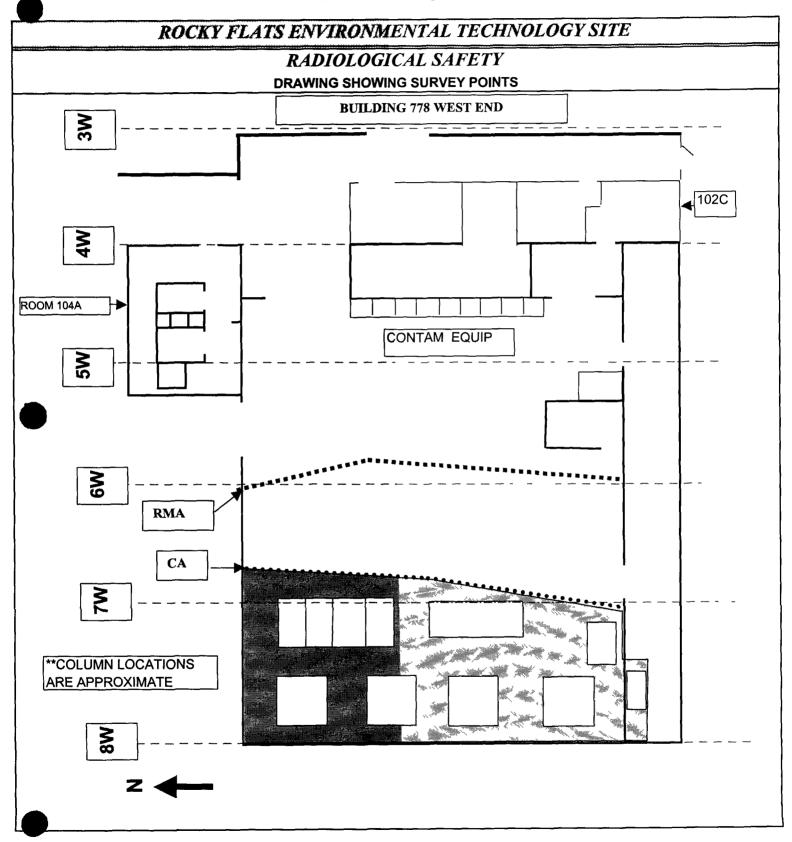
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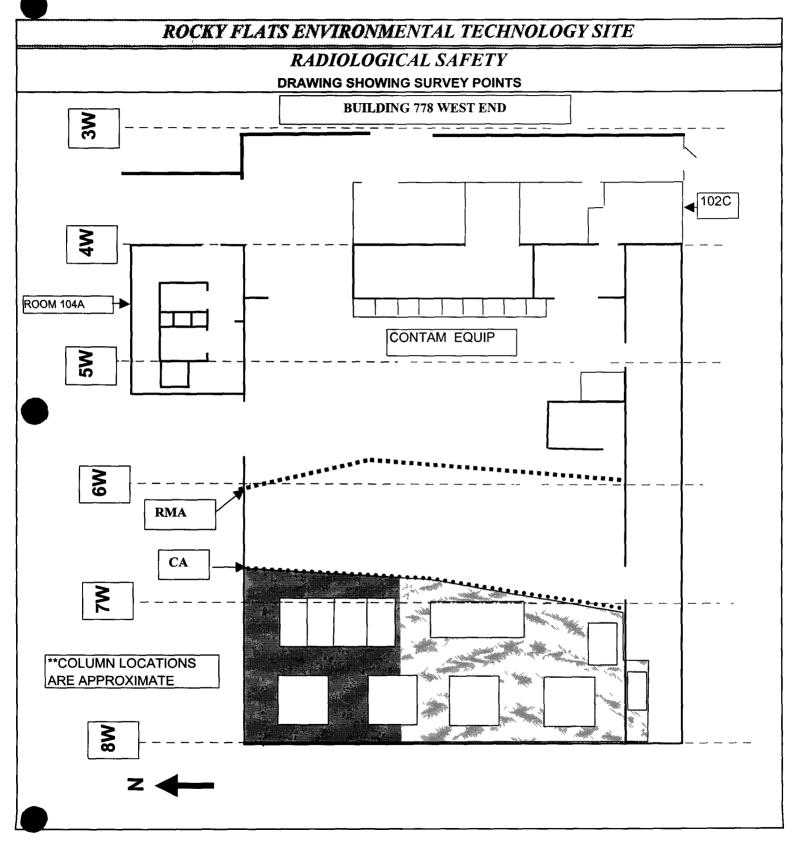
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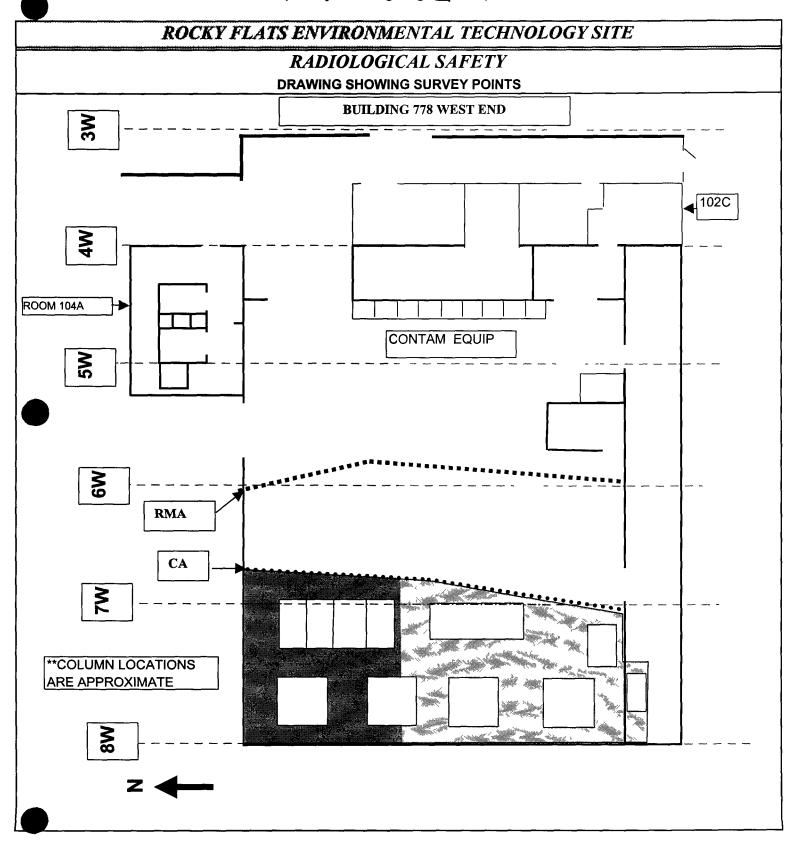
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	Cal Due Bkg Efficiency MDA Mfg Model Serial# Cal Due Bkg	Cal Due Cal Bkg Bkg Efficiency Effic MDA MD Mfg Mfg Model Moo Serial# Seri Cal Due Cal Bkg Bkg Efficiency Efficiency Efficiency MDA MD	Cal Due Bkg Efficiency MDA Mfg Model Serial# Cal Due Bkg Efficiency MOA Model Serial# Cal Due Cal Due Bkg Efficiency MDA MDA MDA Remainter Cal Due Remainter Cal Du	Cal Due Bkg Bkg Efficiency MDA Mfg Model Serial# Cal Due Bkg Efficiency MOA Model Serial# Cal Due Bkg Efficiency MDA MDA MOA Removable	Cal Due Bkg Bkg Efficiency MDA Mfg Model Serial# Cal Due Bkg Efficiency Model Serial# Cal Due Bkg Efficiency MDA Serial# Cal Due Bkg Model Model Serial# Cal Due Bkg Bkg Efficiency MDA MDA SURY Cocation/Description	Cal Due Bkg Bkg Efficiency MDA Mfg Model Serial# Cal Due Bkg Bkg Model Serial# Cal Due Bkg Bkg Efficiency MDA Serial# Cal Due Model Model Serial# Cal Due Bkg Model Model Serial# Cal Due Bkg Bkg Efficiency MDA MDA SURVEY Cocation/Description	Serial# Location	Serial	Sernal# Sernal# Location Cal Due Cal Due Bkg Bkg Efficiency Efficiency MDA MDA Mfg Mfg Mfg Model RCT Sernal# Sernal# Print name Cal Due Cal Due Bkg Bkg RCT Efficiency Efficiency MDA Sernal# Sernal# Print name Cal Due Cal Due Bkg Bkg RCT Efficiency Efficiency MDA SURVEY RESULTS Cocation/Description Removable Direct Alpha Beta Alpha Beta # (Results in DPM Results in DPM	Serial# Serial# Cal Due Cal Due Durpose Reconnaisance Level Chara Bkg Bkg Efficiency Efficiency MDA MDA Mfg Mfg Mfg Model Serial# Print name Sig Cal Due Cal Due Bkg Bkg Efficiency Efficiency Efficiency Efficiency MDA MDA Serial# Serial# Print name Sig RCT / Print name Sig Efficiency Efficiency MDA MDA Survey results Survey resu	Serial# Serial# Cal Due Cal Due Bkg Bkg Efficiency Efficiency MDA MDA Date Time Mfg Mfg Model Model RCT / Serial# Print name Signature Cal Due Cal Due Bkg Bkg RCT / Frint name Signature Bkg Bkg Bkg RCT / Print name Signature Cal Due Cal Due Bkg Bkg RCT / Print name Signature MDA MDA MDA MDA MDA REmovable Direct Results in DPM/100CM²) Alpha Beta Alpha Beta Print name Signature SURVEX RESULTS Cocation/Description Removable Direct Results in DPM/100CM²) Alpha Deta Alpha Beta Alpha Beta Print name Signature 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Serial#	Serial# Scrial# Location Cal Due Bkg Bkg Efficiency Efficiency MDA MDA Mfg Mfg Model Model RCT / / / / Serial# Serial# Print name Signature Em Signature Em MDA MDA Serial# Serial# Print name Signature Em MDA MDA Serial# Serial# Print name Signature Em MDA MDA Serial# Serial# RCT / / / / / / / / / / / / / / / / / / /



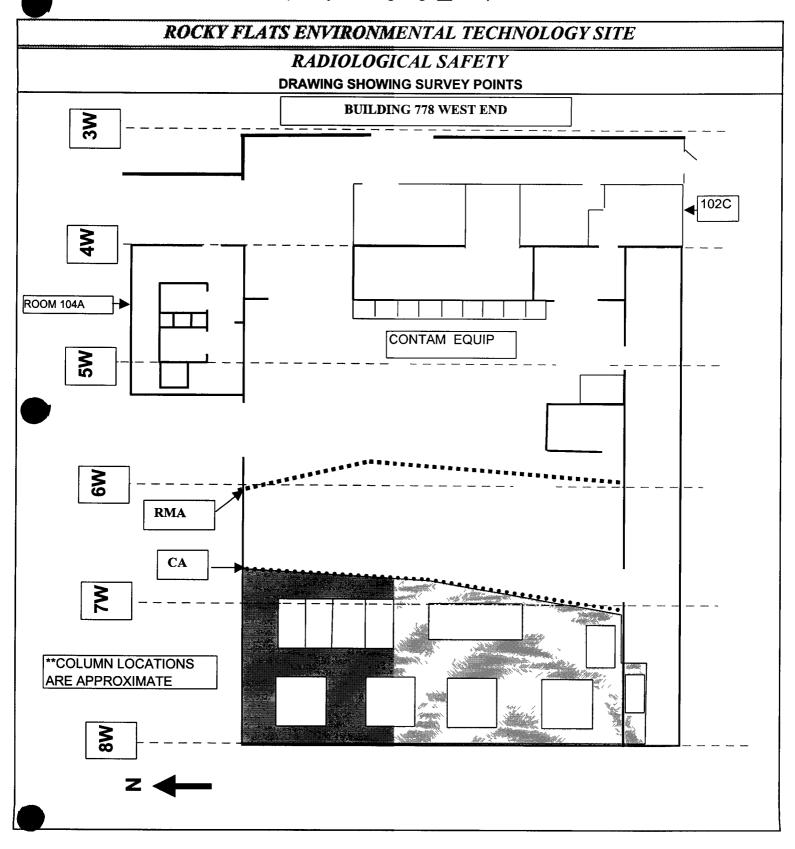
		INSTRUMEN		L												
lfg		Mfg							`ype		<u>AMIN</u>					_
Mode		Model	Mod	lel			Bi	uldıng								
Seria		Serial#	Sen					ocation								_
	Due	Cal Due		Due			Pι	irpose	Reconn	aisance l	Level C	haracter	ızatı	on		
_		Bkg		<u> </u>												
	ency	Efficiency		iency			R'	WP#								_
ADA	A	MDA	MD	A			l									
							D	ate			′	Time				
Afg.		Mfg		<u> </u>				~~			,				,	
/lode		Model	Mod				IR	CT							<u> </u>	_
eria		Serial#		al#					Print n	ame		Signat	ure		Em	p
	Due	Cal Due		<u>Due</u>				O.T.			,				,	
kg		Bkg					R	CT							<u> </u>	_
	ency			ency			- }		Print n	ame		Signat	ure		Em	p
1DA	4	MDA	MD	<u> </u>												
					SI	URVE	Y RI	ESULT	<u>S</u>						_	_
unt		Location/Description		Remov		U RVE Direc			Loc	eation/Des			Remo	ovable	Dii	·e
unt #		Location/Description (Results in DPM/100CM²)			vable		t Po	ınt	Loc	cation/Des					D11 Alpha	_
#					vable	Direc	t Po	int #	Loc							_
1					vable	Direc	t Po	int #	Loc							_
# 1 2					vable	Direc	et Po Seta #	int # 1	Loc							_
1 2 3					vable	Direc	Poseta #	1 2 3	Loc							_
1 2 3 4					vable	Direc	Poseta #	int # 1	Loc							_
1 2 3 4 5 5					vable	Direc	Post Post Post	1 2 3 4 5 6	Loc							_
1 2 3 4 5 6					vable	Direc	Post Post Post	1 2 3 4 5 6	Loc							_
# 11 1 22 33 44 55 66 77 88					vable	Direc	Post Post Post	11 22 33 44 55 66 77	Loc							_
# 11 1 22 33 3 44 55 66 77 88					vable	Direc	Post Post Post	1 2 3 3 4 4 5 5 6 6 7 8 8	Loc							-
1 1 2 3 3 4 4 5 5 6 6 7 8 8 9 10 10					vable	Direc	Post	1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9 9	Loc							-
1 1 2 3 3 4 4 5 5 6 6 7 8 8 9 10 10					vable	Direc	Po Po Po	1	Loc							-
1 1 2 3 3 4 4 5 5 6 6 7 7 8 8 9 10 11 11 12					vable	Direc	Po Po	1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9 9 0 1 1 2 2	Loc							-
1 1 2 3 3 4 4 5 5 6 6 7 7 8 8 9 9 10 11 12 13					vable	Direc	Po Po Po Po Po Po Po Po	1	Loc							-
11 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9 9 0 1 1 2 2 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4					vable	Direc	Po Po Po	1	Loc							-
# 11 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9 9 10 11 2 2 13 3 4 4 5 5 6 6 1 1 1 2 1 3 1 4 1 5 5 6 6 6 7 7 8 8 9 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					vable	Direc	Po Po Po	1	Loc							-
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1 1 2 3 4 4 5 5 6 6 7 7 8 8 9 10 11 12 13 14 15 16 17					vable	Direc	Po Po Po	1	Loc							-
# 1 1 2 3 3 4 4 5 5 6 6 7 7 8 8 9 9 10 11 12 13 14 15 16 17 18					vable	Direc	Po Po Po Po Po Po Po Po	1	Loc							_
1 2 3 4 4 5 6 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20					vable	Direc	Po Po Po	11	Loc							_



A SECTION AND A SECTION ASSESSMENT OF THE SE	ROCK	Y FLATS E	NИ	ROI	ÝИ	ENTA	L TECH	INOLO	GY SITE				
	INSTRUMEN	T DATA											
fg	Mfg	Mfg				Survey	Type [•]	CONT	AMINATIO	N			
Model	Model	Model				Buıldın	g						
Serial#	Serial#	Serial#				Locatio	n						
Cal Due	Cal Due	Cal Due				Purpose	Reconn	iaisance I	Level Chara	eterizatio	on		
Bkg	Bkg	Bkg											
Efficiency		Efficiency				RWP#			_				
MDA	MDA	MDA	········										
					i	Date			Time				
Mfg		Mfg											
Model	Model					RCT_						<u>/</u>	
Serial#	Serial#						Print i	name	Sig	nature		Em	p#
Cal Due	Cal Due	Cal Due											
Bkg	Bkg					RCT_						<u>/</u>	
Efficiency					į		Print i	name	Sig	nature		Em	p#
MDA	MDA	MDA_											
Point	Location/Description	Rem	ovable			RESUL Point		cation/Des	cription	Remo	ovable	Dir	rect
#	(Results in DPM/100CM ²)		Beta	Alpha	Beta	#		sults in DPM		Alpha	Beta	Alpha	Beta
1						21							
2						22							
3						23							
4						24							
5						25							
6						26							
7						27							
8						28							
9						29							
10						30							
11						31							
12						32							
13						33							
14						34							
15						35							
16						36							
17						37							
18						38							
19						39							
20						40							
Date Review	ed	RS Supervisi	on										
4]	Print Na	me		Signatu	re		Em	p#



2000	ROCK	FLATS	EN	ARÔ	NM	ENTA	L TECH	<u>INOLO</u>	GY SITE				
	INSTRUMEN	T DATA		<u>.</u>	_								
Afg	Mfg	Mfg _						CONT	<u> TAMINATIO</u>)N			
Model	Model	Mode					ng						
Serial#	Serial#	Serial	#			Locati							
Cal Due	Cal Due	Cal D				Purpo	se Recon	naisance	Level Chara	cterizatio)n		
Bkg													
Efficiency		Efficie	ncy _			RWP:	[#]		 				
MDA	MDA	MDA	·			_							
	2.50					Date			Time	·	_		
Mfg	Mfg	Mfg				D.C.T.			,			,	
Model	Model					RCT_						<u></u>	
Serial#	Serial#		l#				Print	name	518	gnature		Em	.р <i>†</i>
Cal Due	Cal Due	Cal D				пот			,			,	
Bkg	Bkg					RCT_	D 4					<u></u>	
Efficiency MDA	Efficiency MDA	Efficien MDA	-				Print	name	Sış	gnature		Em	p #
PRL#													
Comments				_									
				SUR	VEY	RESU	LTS						_
oint	Location/Description		Removal			Point		ocation/Des			ovable	_	rect
<i>#</i>	(Results in DPM/100CM ²)	A	Alpha Bo	ta Alph	Beta	#	(Re	esults in DPM	1/100CM²)	Alpha	Beta	Alpha	Be
1						21					<u> </u>	ļ!	<u> </u>
2						22							L
3						23							_
4						24							L
5						25							L.
6						26	*						
7						27							
8						28			-				
9						29							
10						30							
11						31							Γ
12						32		-	<u> </u>				
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18			\dashv	+	+-	38				_	-	 	\vdash
19 20			-	+-	 	39 40						\vdash	-
20					1	40	-				Ц	<u> </u>	
) Date Review	'ed	RS Super	vision					1				/	
						Print N	ame		Signatu	re		Em	n



PROPERTY OF THE PROPERTY OF T

ig <u>Eberline</u>	Mig Eberline	Mfg NeTech
Model Sac-4	Model Sac-4	Model Electra
Serial # 844	Serial #_1054	Serial # 3265
Cal Due 8-15-00	Cal Due 8 23-60	Cal Due 7-3-00
Bkg <u>0.2 cpm</u>	Bkg 0.5 cpm	Bkg oio cpm
Efficiency 33%	Efficiency 33%	Efficiency ,2/0/
MDA 12.9 6pm	MDA 15.6 dpm	MDA 94 dom
•		,
Mfg Eberline	Mig Eberline	Mfg NE Tech
Model BC-4	Model BC-4	Model Electra
Serial #_833	Serial #	Serial # 2307
Cal Due 7-14-00	Cal Due	Cal Due 7-12-00
Bkg 46com	Bkg	Bkg 2.0 Cpm
Efficiency 25%	Efficiency 25%	Efficiency , 1940
MDA 104.5 dam	-MDA	MDA 94 dom
C T1-	/ 337-11 0 - 4	77.1

INSTRUMENT DATA

Contamination Survey Type. Building 778 Location West Area Survey Area B Reconnaisance Level Characterization Purpose

RWP# 00707 1204

Date 4-17 4-19 -00 Time Days

RCT RLLincoln Bakinsoln
Print name / Signature

RCT 5 JARLYOWSKY Print name

195

Comments Floor / Walls < 2 meters Unbiased survey points

1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

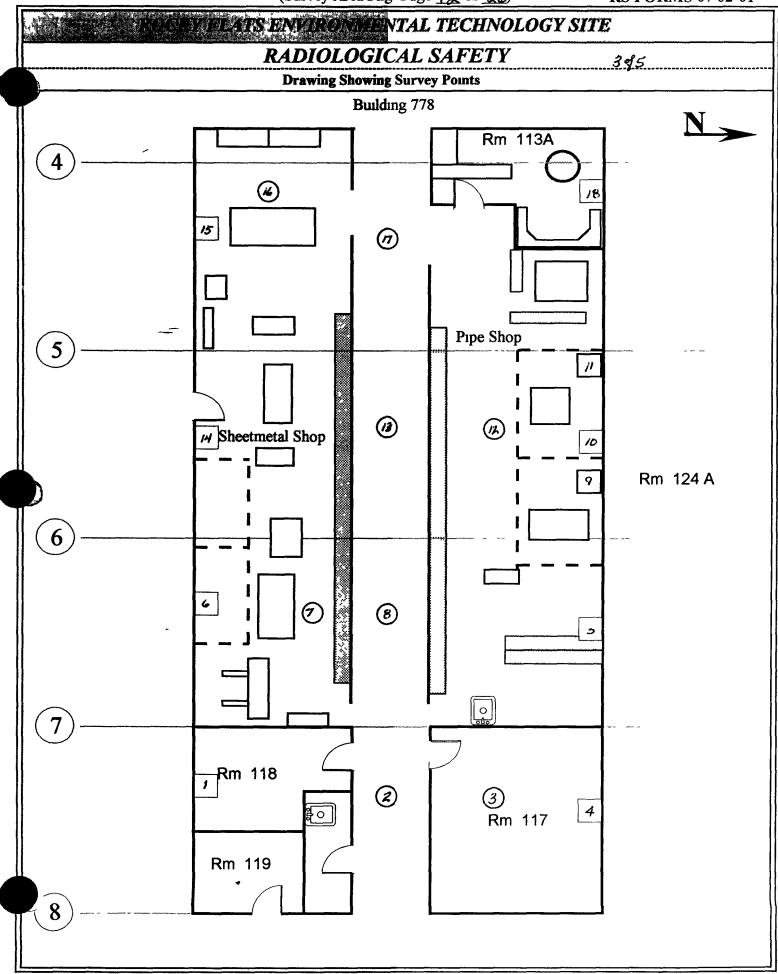
Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
\mathcal{D}_1	Wall < Rm	o	-28	24	16	F	٥	40	48
2	F	0	- 4	6	17	F	0	-16	30
3	F	3	-4	18	18	Wall < 2m	0	52	18
4	Wall < Zm	0	- 32	24	19	F	0	-16	0
5), ,1	0	0	24	20	Wall <2m	0	20	30
6	1) []	0	4	48	21	/I //	0	36	36
7	F	O	-16	30	22	F	0	-16	18
8	F	0	0	12	23	F	0	24	30
9	Wall <2m	0	-16	12	24	Wall < Zm	3	28	30
10) <i>1</i>	0	-40	36	25	F	0	-28	30
11	<i>)</i> 1	0	-12	30	26	Wallszm	0	-4	24
12	F	O	- 4	30	27	<i>)</i> 1 ,1	0	-4	24
13	F	0	3	/8	28	F	0	20	18
14	Wall < 2m	0	9)	24	29	F	0	-4	હ
45	ון וו	0	O	18	30	Wall < 2m	0	12	U

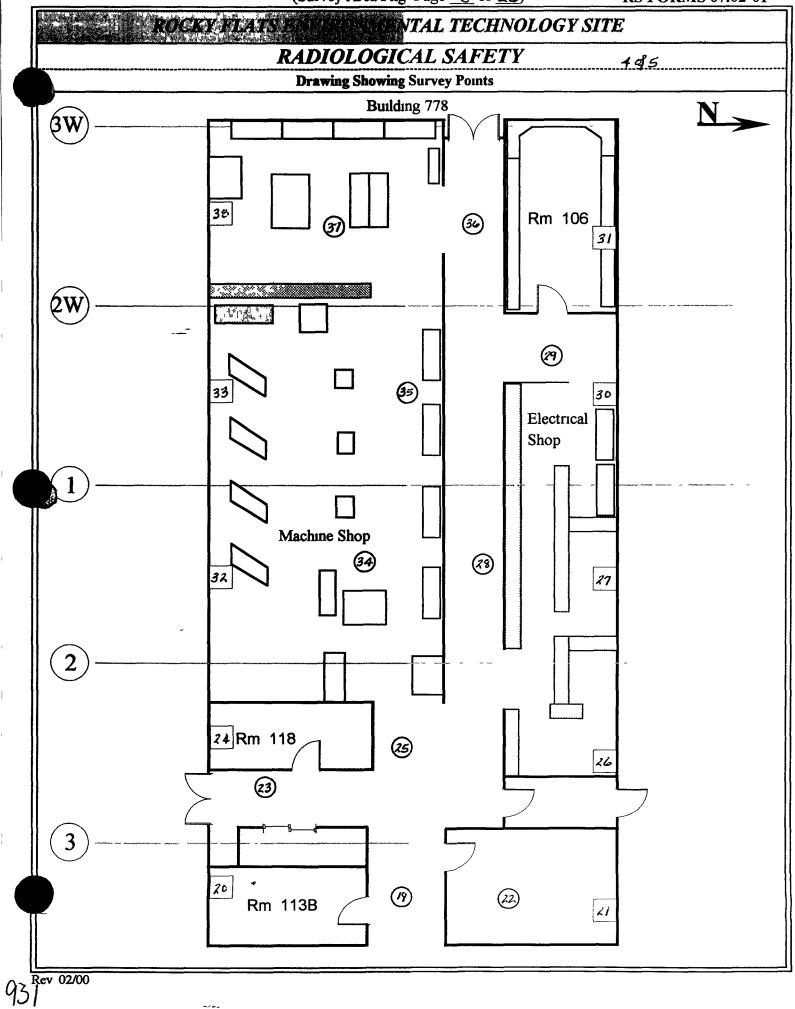
Date Reviewed 5 2 00 RS Supervision

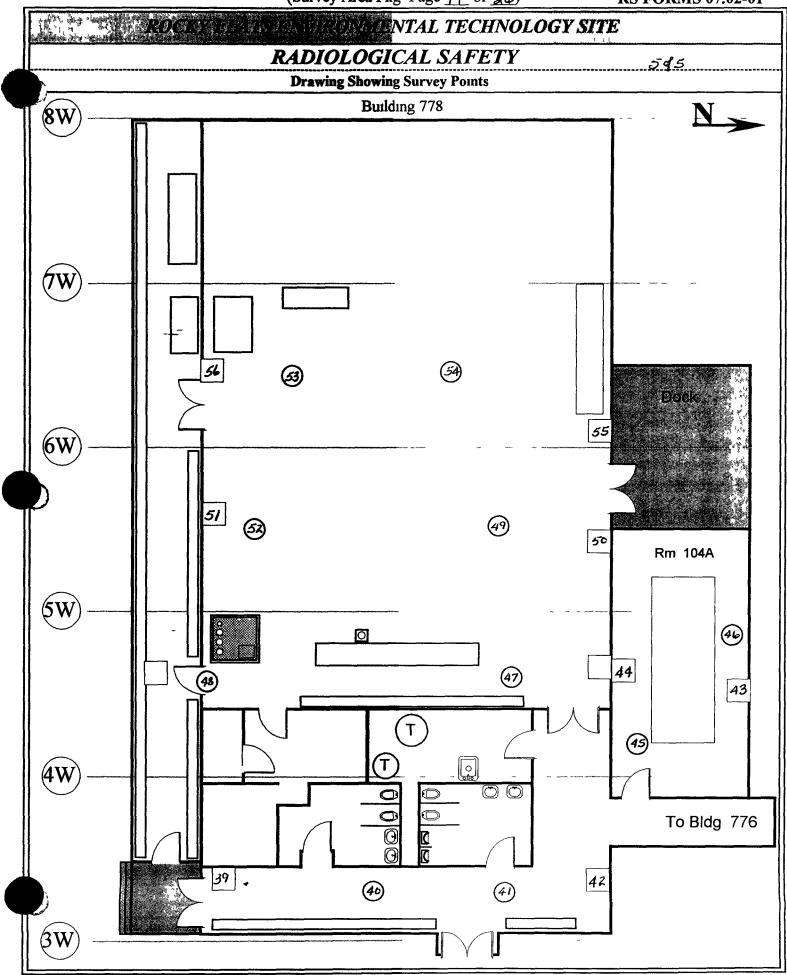
Stuckrath Print Name

Signature

ROCKY BLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY 245 **Drawing Showing Survey Points** Removable Total Removable Location\Description Total Swipe Swipe Location\Description Aipha (Results in DPM/100cm²) Alpha | Beta (Results in DPM/100cm²) Alpha Beta **Al**pha -32 Wall < Zm " -20 -16 -16 Ø g Wallszm -28 -20 -12 Wall <2m -24 -8 -36 - 4 -24 -16 -20 WallKam -8 -24 F - 44 Wall 12m NA.







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THE COMMENTAL TECHNOLOGY SITE **INSTRUMENT DATA** Contamination Survey Type **\fg**. _ Eberline Mfg Eberhne Mfg. NeTech. Building 778 Model Sac-4 Model Sac-4 Model Electra Serial # 846 Survey Area R Location West interior Serial #_/054 Serial # 2166 Reconnaisance Level Characterization Cal Due 8-15-00 Cal Due 8-23-00 Cal Due 9-22-00 Bkg o.o com Bkg O.4 Com Bkg O.O.Com RWP# 00707 1204 Efficiency 33% Efficiency 33% Efficiency 1700 MDA <u>8.2 dom</u> MDA 14.8dpm MDA <u>94 dpm</u> Date 424 4-25-00 Time Nays Mfg. Mfg Eberline Mfg Eberline Model BC-4 Model BC-4 Model

MDA 1013 Jam MDA 1034 Jam MDA

Comments Floor / Walls < 2 meters Biased survey points 1 m² scans, 1 minute pats and swipes See map for locations

Senal #_ Cal Due

Efficiency

Bkg.

Serial # 833

Cal Due 7-14-66

Bkg 45 com

Efficiency 25%

SURVEY RESULTS

			50	KVE1	ICCOU!				
Swipe	Location\Description	Rem	ovable	Total	Swipe	Location\Description	Rem	ovable	Total
#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
\mathcal{D}_1	Rm 119 Floor Drain	0	-60	54	16				
	Rm 117 Floor Drain	3	-52	18	17	K.			
	Rm 104A Pleum Door	Ø	-8	78	18				
	Rm 104A Floor Drain Front of Wolkway	٥	-20	32	19				
5	Front of Wolkway Sheetmetal Shop Floor Drain	0	12	18	20				
	Bm 108 Noor Floor Drain	0	-12	36	21				
	At Doorway #100 Sheetmetel	0	-44	12	22				
8	Shop Chipped Concrete	6	-/2	12	23				
9	Ocor 119 Walkway Floor Orain	0	-20	12	24				
	At Doorway # 222	3	0	18	25				
11	Ka '				26				
12					27)		
13					28				
14	•				29				
25								l	

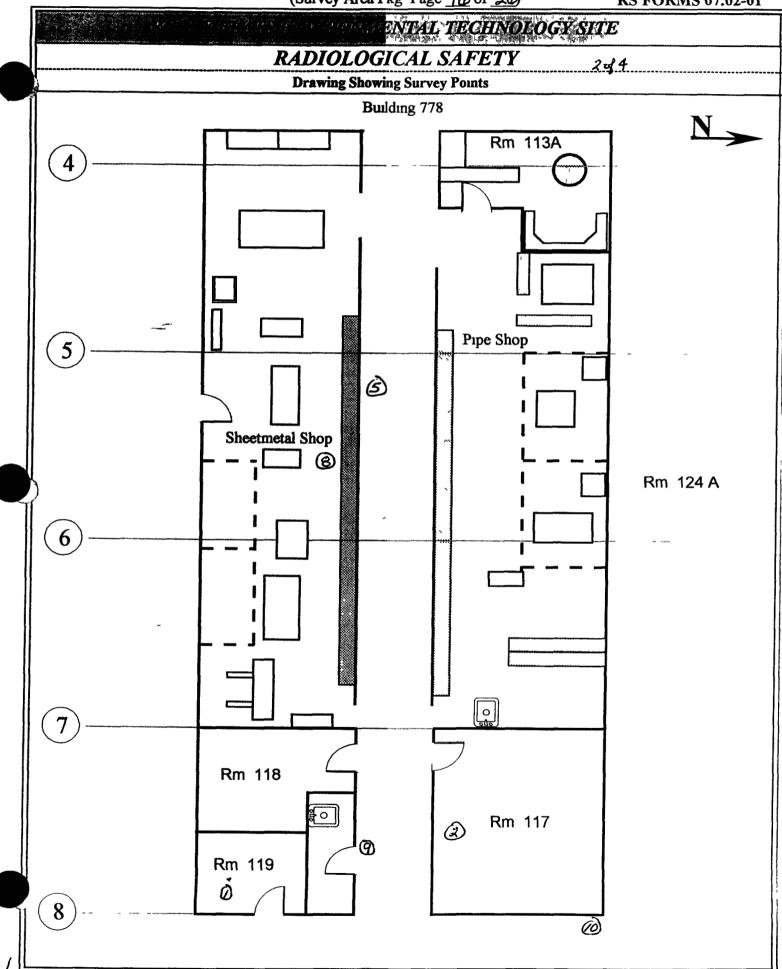
Date Reviewed. 5200 RS Supervision:

Serial # 959

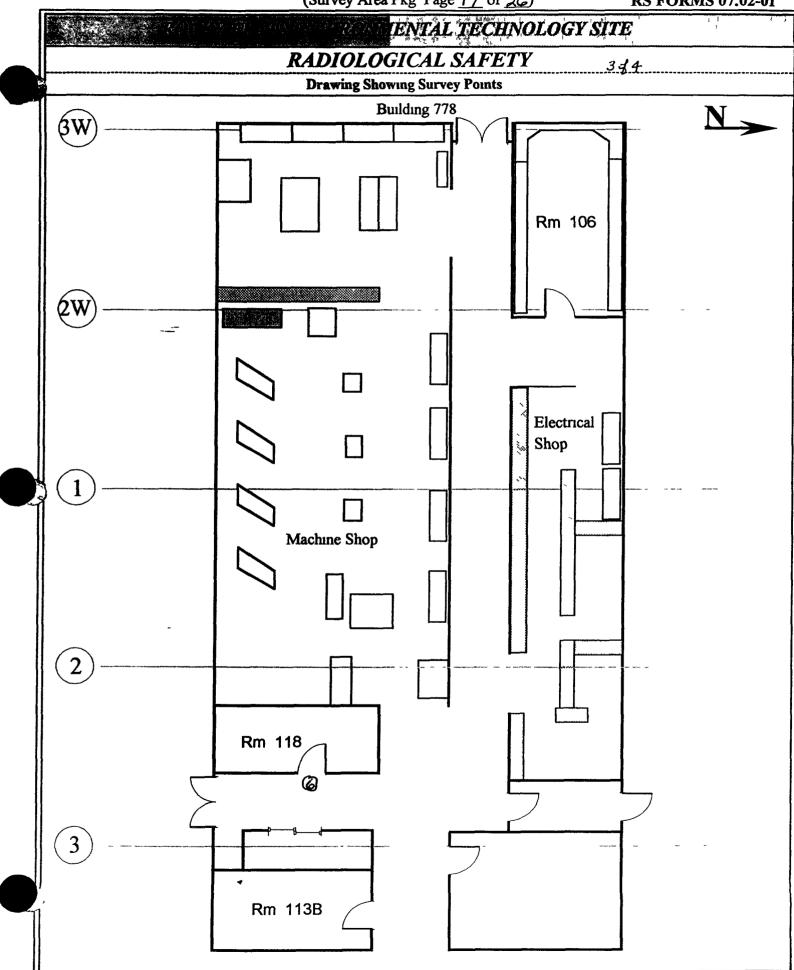
Cal Due 7-19-60

Bkg 43 com

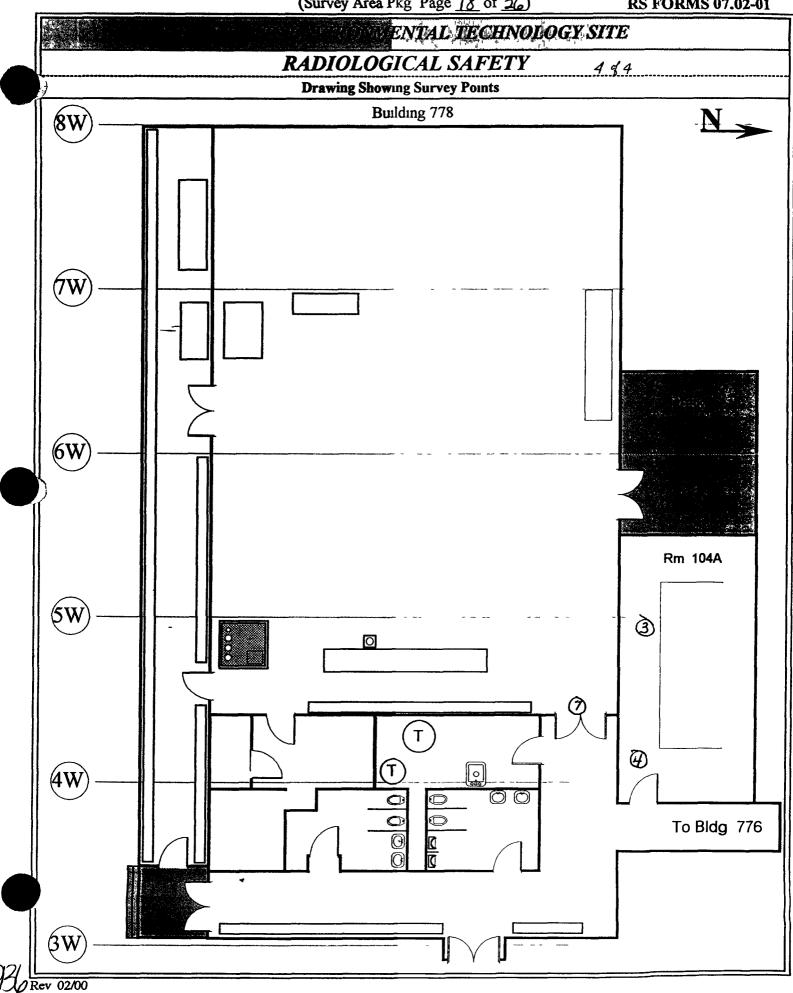
Efficiency 25%



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VMENTAL TECHNOLOGY SITE

INSTRUMENT DATA								
Mfg. Eberline	Mfg. Eberline	Mfg NeTech						
Model Sac-4	Model Sac-4	Model Electra						
Serial # 846	Serial # 10.5.4	Serial # 2166						
Cal Duc 8-15-00	Cal Due 8-23-00	Cal Due 9 22-0 0						
Bkg. Oiocpm	Bkg. 0,4com	Bkg Zocpm						
Efficiency_33%_	Efficiency 33%	Efficiency 1700						
MDA 8,2dpm	MDA 1486pm	MDA <u>940pm</u>						
Mfg. Eberline	Mfg Eberline	Mfg. Ne Tech						
Model BC-4	Model BC-4	Model Electra						
Serial # 959	Serial # 833	Serial # 3/20						
Cal Duc 7-19.00	Cal Due 21400	Cal Due 426-00						
Bkg. <u>43 cp m</u>	Bkg. <u>45epm</u>	Bkg 2.0						
Efficiency 25%	Efficiency 25%	Efficiency ,2109						
MDA 101.3 dem	MDA 103.4 dpm	MDA 94 dom						

Survey	Type	Contamination	<u></u>
Building	778		
Location	11)051	Interior	Survey Area B
Purpose	Rec	onnaisance Level (Characterization

RWP# 00 707 1204

Date 4-19 4-20 4-25-00 Time Days

194



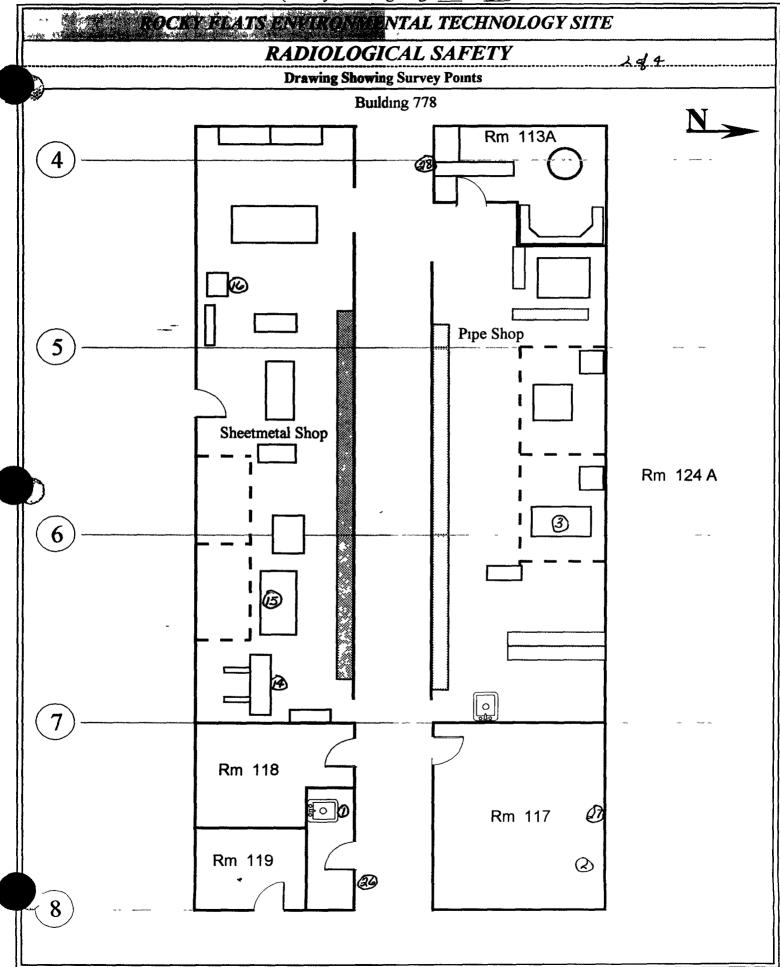
Comments Equipment Biased survey points

1 minute pats and swipes See map for locations

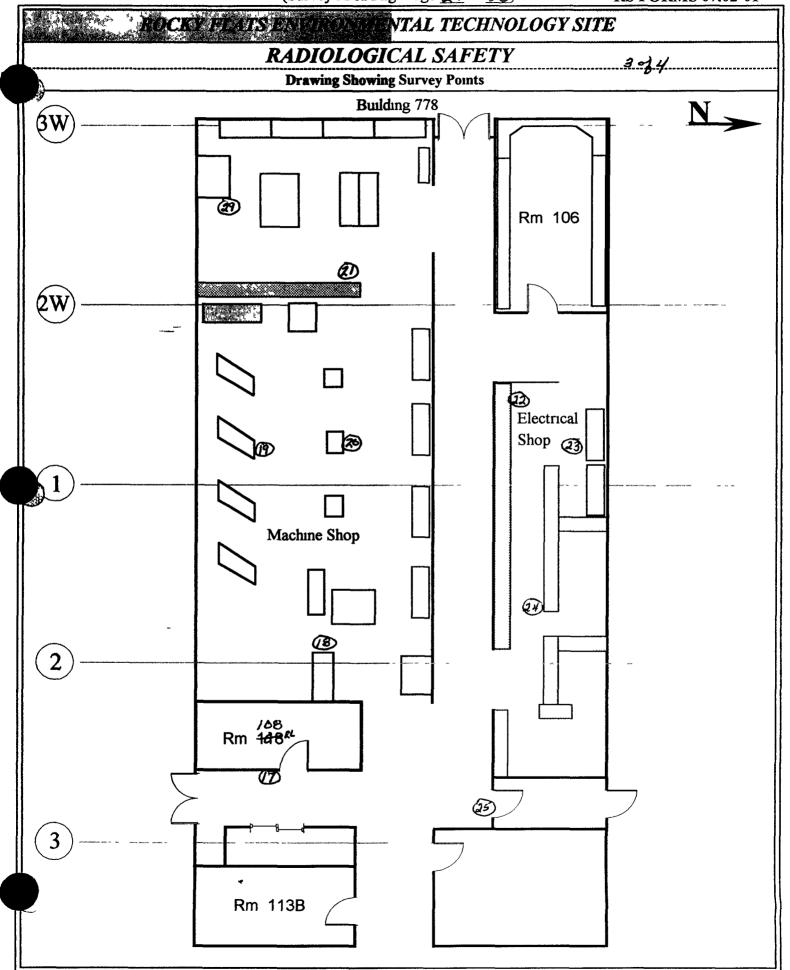
SURVEY RESULTS

1	wipe Location/Description		Removable		Swipe	Location\Description	Removable		Total
SWIPS #	(Results in DPM/100cm ²)	Alpha	Beta	Total Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
1	Rm 119 Sink	b	-12	60	16	Sheet metal Shop Dr. // Press	٥	-8	24
11	Rm117 Tank Flange	0	-24	24	17	Rm 108 Hallway Cabinets	0	-12	18
11	Pipe Shop Ceiling Hood	0	0	12	18	Machine Shop Band Saw	0	4	12
Ħ	Rm 104A Rump Housing	3	-12,	54	19	Machine Shop Engine Lathin	0	-48	18
li	Rm 104A Vacum Fliter	4	-40	6	20	Machine Shop Bridge Poit Lathe	0	-20	12
6	Rm 104 A Pleum Door	0	- 8	18	21	Paint Shop Cabinets	O	-32	12
ll .	Rm 104 A Pleasen Soon	6	24	36	22	Electrical Snop Steal Countertos	3	-28	6
	Bm 104A Top of Pleum	4	-24	156	23	Electrical Shop Wallvent	0	-40	12
Ħ	Rm 104 Ar Pipe Top of Pkum	0	-8	36	24	Electrical Shop Cabinets	0	-4	6
! }	Rm 104A Top of Pleum	3	-12	90	25	Hallway Electrical Pane	0	-32	0
ij	Rm 104A Pleum Squirrel Cage	0	-24	24	26	Door 119 Radicinetri- Scann	er O	4	36
!!	Rm 104A Top Electrical Box	0	36	54	27	Rm 117 Piping	3	-52	18
	am 104A Pleum Door	0	-28	24	28	Walkwy By113A Electrical BC+	0	-44	0
14	Shaetmetal Shren Shop Foot Pedal Press	S	-56	6	29	Paint Sney Hord	C)	C	12
. 15	Sheetmetal Shop Steel Table	o	4		_	,			

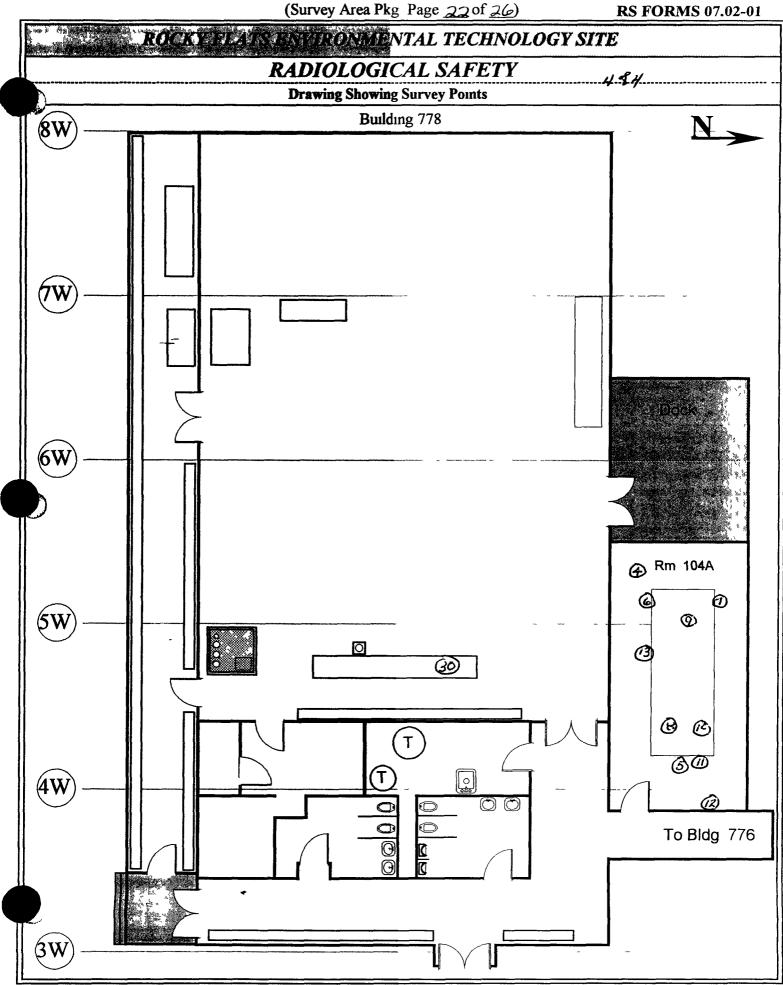
Date Reviewed: 5.00 RS Supervision.



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 $939^{\frac{2000}{\text{Rev}}}$



VENTAL TECHNOLOGY SITE INSTRUMENT DATA Contamination **Survey Type** fg Eberline Mfg Eberline Mfg NeTech Building 778 Model Sac-4 Model Sac-4 Model Electra Survey Area B Location West Interior Serial # 846 Senal # 10.54 Serial # 1233 Reconnaisance Level Characterization Purpose Cal Due 8-15-0 Cal Due 8.23-00 Cal Due 3-11-00 Bkg 0.0 cpm Bkg. 0,3cpm Bkg 4.0 cpm RWP# 00 767 1264 Efficiency 33% Efficiency 33% Efficiency , 2063 MDA 8.2 dpm MDA 13,9 dpm MDA <u>94 dem</u> Date 4-26 4-27-06 Time Days Mfg Eberline Mfg. Eberline Mfg. Model BC-4 Model Model BC-4 Serial # 959 Senal # 833 Senal# Cal Due 7-14-00 Cal Due 7-19-00 Cal Due

Comments Ceiling / Walls > 2 meters Biased survey points

Bkg 43 cpm_

Efficiency 25%

MDA 101.3 dam MDA 101.3 dam

Bkg <u>43 cpm</u>

Efficiency 25%

1 minute pats and swipes See map for locations / 4 4

Bkg

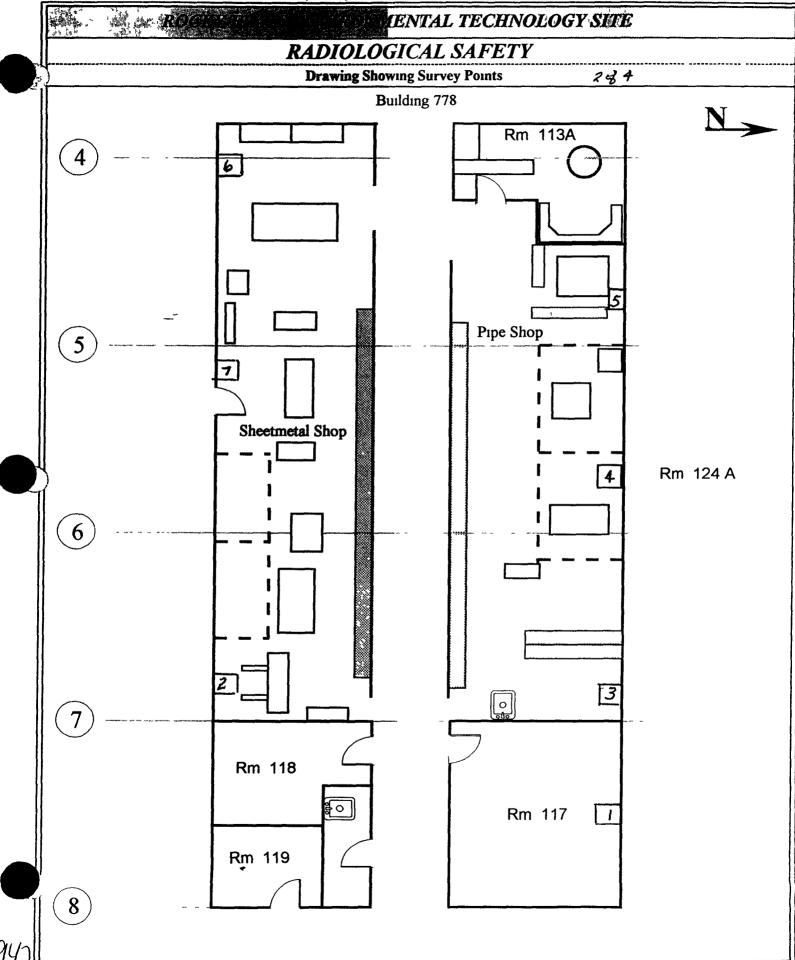
MDA

Efficiency

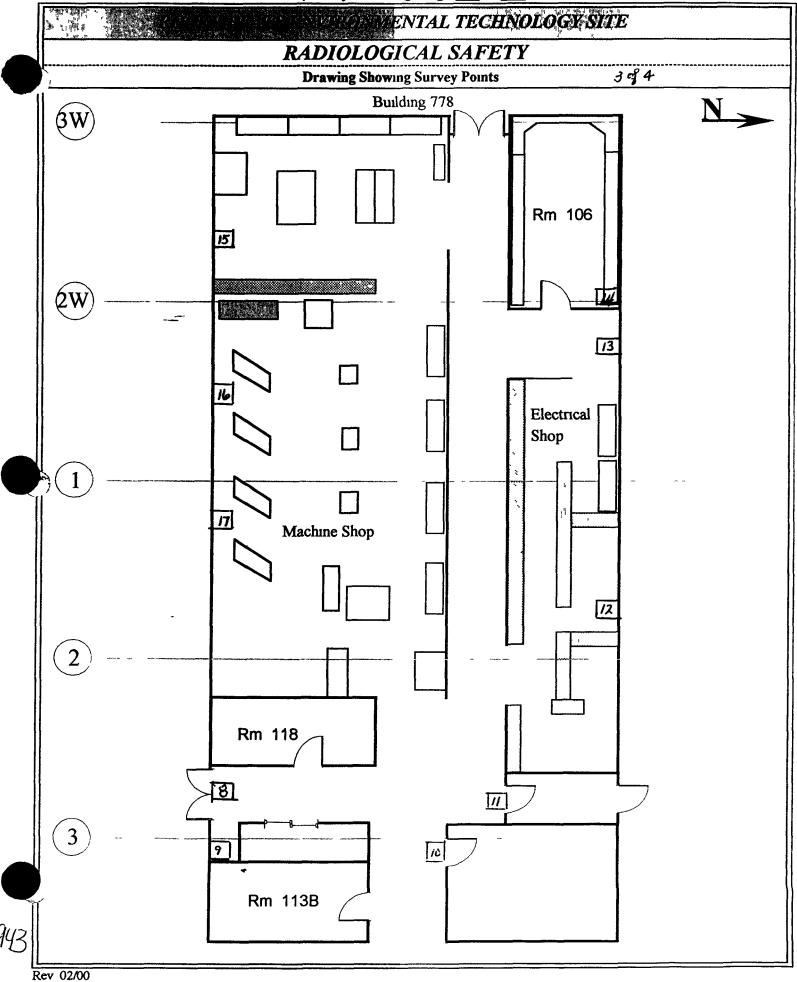
SURVEY RESULTS

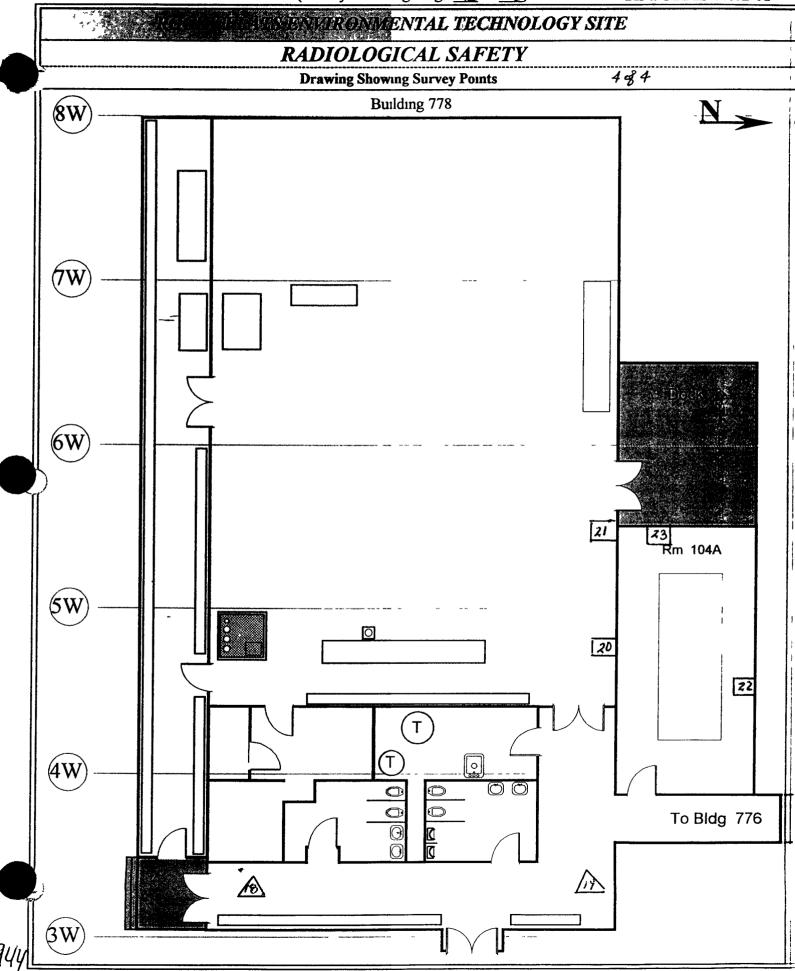
									أحسسا
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
\mathcal{D}_1	Wall >Zm	3	728	6	16	(e) = 11 > 2m	0	-12	18
2) // //	0	4	18	17	Wall > 2m	0	- g	12
3	11 11	0	-24	6	18	Ceiling	٥	-36	36
4	11 /	0	-20	18	19	Ceiling	0	્યું.	30
5	μ μ	٥	-16	24	20	Wall > 2m	٥	•	24
6	11 //	0	-12	12	21	Wall 7 2m	0	-12	42
7	() //	0	-8	36	22	Wall > 2m	9	-12	66
8	וו	3	-8	42	23	Wall > 2m	0	24	24
9	n u	0	-28	12,	24	No.			
10	11 11	3	-4	6	25				
11	11 11	0	-12	24	26				
12	μ μ	0	-20	36	27				
13	11 11	٥	-20	18	28				
14	11 II •	3	-12	24	29				
415	// / [/]	0	- 28						

Date Reviewed 52.00 RS Supervision:



Rev 02/00





SURVEY PACKAGE TRACKING FORM

Package ID. 2000-0002	,	Building (707) 778 WI	EST - CA
Survey Area C		Survey Unit N/A	
Initiator/ Date	Release Date	Validation Date	Closure Date
9) 2/24/00	Jf 3/10/00	EMM 5/15/00	EDM 5/15/00

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 2000	0-0002	Building (707) 7	78 WEST - CA	Type 2	
Survey Area C		Survey Unit N/A	1	Area (m ²) ~106	
EXTENDS WEST		CONTAMINATION A TO THE WEST EN Y			
Survey Type			Classification		
RLC Survey X	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown X
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
30	20	30	0	0	40
Building		Туре		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Desc	cription	-			
Survey Type			Classification		
RLC Survey □	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown □
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Туре		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Desc	cription				
Survey Type			Classification		
RLC Survey □	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown □
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans
Building		Туре		Survey Area	
Survey Unit			Area (m²)		
Survey Unit Desc	ription		Scott State of the		
Survey Type			Classification		
RLC Survey □	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown □
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans

SURVEY PACKAGE COVER SHEET

Package ID: 2000-0002	Building • (707) 778 WEST - CA
Survey Area: C	Survey Unit N/A
Survey Unit Description: POSTED CONTAMINATI AREA EXTENDS WEST FROM COLUMN 7W TO THE WES RADIOLOGICAL LAUNDRY FACILITY	
Building Information:	
Survey Type Reconnaissance Level Characterization St	urvey X Final Status Survey
Building Type Type 1 □ Type 2 X Type 3 □	
Classification Class 1 🗆 Class 2 🗀 Class 3 🗀 Un	known X
Contaminants of Concern Plutonium X Uranium X O	ther 🗆
Justification for Classification: N/A	
Special Support Requirements: Ladder, manli instrumentation may be required for access into	
Special Safety Precautions: Access to overheat additional controls or approvals from security made	
Isolation Controls:	
Level 1 □ Level 2 □ N/A X	
Labeling Requirements: NONE	
Survey Package Implementation:	
	3/8/00
	Date
	N/A
	3/9/W
	3///6
	5/15/00
	Date
	N/A
	Date
	3/15/40
	Date

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID 2000-0002	Building (707) 778 WEST - CA
Survey Area: C	Survey Unit N/A
Survey Unit Description: POSTED CONTAMINATIO	

Survey Unit Description: POSTED CONTAMINATION AREA AT WEST END OF BUILDING 778 SURVEY AREA EXTENDS WEST FROM COLUMN 7W TO THE WEST END OF BUILDING IN ROOM 100 AREA IS FORMER RADIOLOGICAL LAUNDRY FACILITY

Measurement Number and Type urface Activity feasurements FLOORS/WALLS < 2 meters 30 uniformly distributed survey points as follows - 5 survey points per wall on N, S, W walls (15 points total) - 15 points on floors between/beneath fixed location equipment 10 biased survey points on floors/walls<2 meters at locations such as - Beneath laundry equipment - Near floor drains - Stained/discolored areas - Areas that are potentially contaminated based on past history/use or based upon RCT judgement CEILINGS/WALLS > 2 meters 10 biased surveys of ceilings and walls > 2	TE 2 TE 3
30 uniformly distributed survey points as follows 5 survey points per wall on N, S, W walls (15 points total) 15 points on floors between/beneath fixed location equipment 10 biased survey points on floors/walls<2 meters at locations such as Beneath laundry equipment Near floor drains Stained/discolored areas Areas that are potentially contaminated based on past history/use or based upon RCT judgement CEILINGS/WALLS > 2 meters 10 biased surveys of ceilings and walls > 2	TE 2 TE 3
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location equipment 10 biased survey points on floors/walls<2 meters at locations such as - Beneath laundry equipment - Near floor drains - Stained/discolored areas - Areas that are potentially contaminated based on past history/use or based upon RCT judgement CEILINGS/WALLS > 2 meters 10 biased surveys of ceilings and walls > 2	
at locations such as - Beneath laundry equipment - Near floor drains - Stained/discolored areas - Areas that are potentially contaminated based on past history/use or based upon RCT judgement CEILINGS/WALLS > 2 meters 10 biased surveys of ceilings and walls > 2	
 Near floor drains Stained/discolored areas Areas that are potentially contaminated based on past history/use or based upon RCT judgement CEILINGS/WALLS > 2 meters 10 biased surveys of ceilings and walls > 2 	
 Stained/discolored areas Areas that are potentially contaminated based on past history/use or based upon RCT judgement CEILINGS/WALLS > 2 meters 10 biased surveys of ceilings and walls > 2 	
- Areas that are potentially contaminated based on past history/use or based upon RCT judgement CEILINGS/WALLS > 2 meters 10 biased surveys of ceilings and walls > 2	
based on past history/use or based upon RCT judgement CEILINGS/WALLS > 2 meters 10 biased surveys of ceilings and walls > 2	
10 biased surveys of ceilings and walls > 2	
meters at areas likely to be contaminated	
- 2 points per wall>2 meters on N, S, W walls (6 points total)	
- 4 points on ceiling around ventilated laundry equipment or other suspect areas	
EQUIPMENT	
30 biased surveys of equipment as follows	
- fixed laundry system and related equipment	
- laundry work benches	
overhead piping/ductwork associated with laundry equipment	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 2000-0002	Building (707) 778 WEST - CA
Survey Area· C	Survey Unit N/A

Survey Unit Description: POSTED CONTAMINATION AREA AT WEST END OF BUILDING 778 SURVEY AREA EXTENDS WEST FROM COLUMN 7W TO THE WEST END OF BUILDING IN ROOM 100 AREA IS FORMER RADIOLOGICAL LAUNDRY FACILITY

	Minimum Survey/Sampling Measure	ment Requirements
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 40 1 m² surface scans shall be taken at each location identified for surface activity measurements Locations found to be above the DCGL will be noted CEILINGS/WALLS > 2 meters NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	NO paint samples to be taken (Floor is linoleum – paint samples not possible)	
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID. 2000-0002	Building (707) 778 WEST - CA
Survey Area: C	Survey Unit N/A

Survey Unit Description: POSTED CONTAMINATION AREA AT WEST END OF BUILDING 778 SURVEY AREA EXTENDS WEST FROM COLUMN 7W TO THE WEST END OF BUILDING IN ROOM 100 AREA IS FORMER RADIOLOGICAL LAUNDRY FACILITY

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM (cont)

Package ID: 2000-0002	Building (707) 778 WEST - CA
Survey Area: C	Survey Unit N/A
Survey Unit Description: . WEST END OF BUIL	DING 778 (POSTED CA)
Survey/Samplı	ng Instructions

SUPPLEMENTAL INSTRUCTIONS

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- 2 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 3 If during the performance of $1m^2$ scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The highest "elevated reading" PAT measurement found in the $1m^2$ scan area will be documented. Swipe measurements will be collected at the elevated reading location as well
- 4 If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is not noted, fixed (PAT) measurements and swipes will be taken from the lower left hand corner of the 1m² scan area to maintain consistency in sample point locations
- 5 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 6 Due to potential impacts from beta-gamma emitters in some specified survey areas, direct and scan <u>beta</u> measurements will <u>NOT</u> be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- 7 Where not already indicated assure that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e g, indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

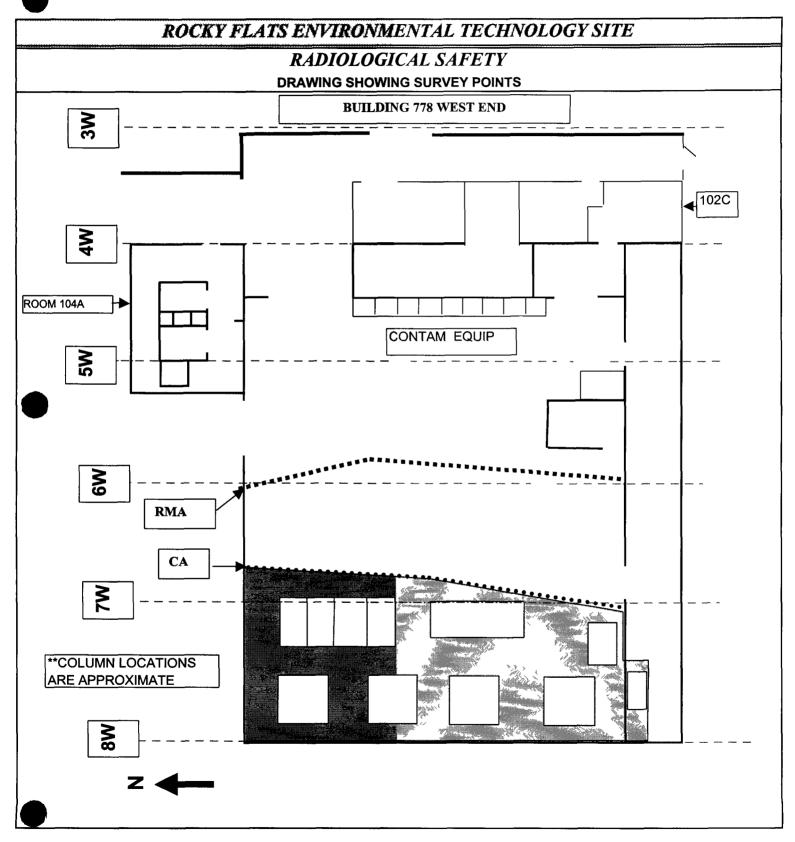
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SURVEY PACKAGE VALIDATION CHECKLIST FORM

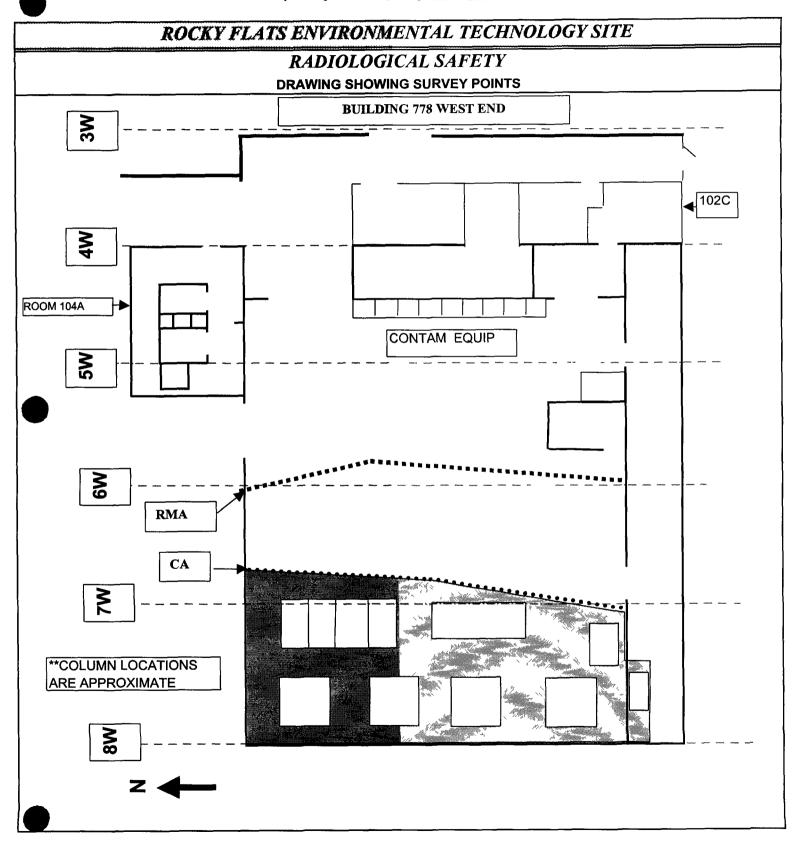
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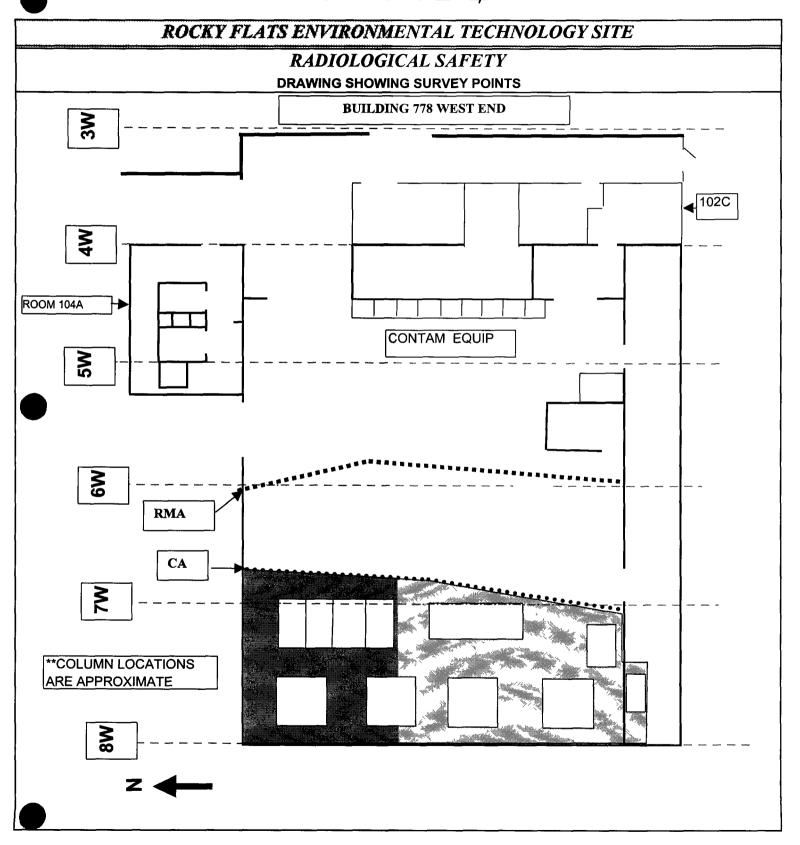


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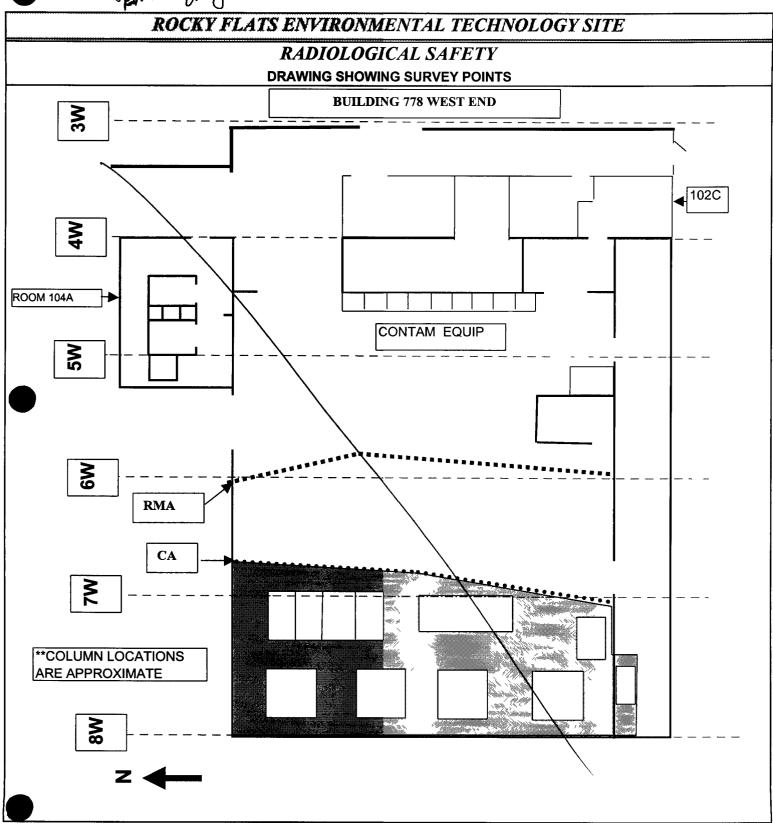


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4							24						<u> </u>	
5							25							
6							26							
7							27							<u> </u>
8							28							
9							29							
10							30					-	igwdown	
11							31	· · · · · · · · · · · · · · · · · · ·					-	
12							32						\vdash	_
13							33		<u>-</u>				\vdash	-
15							34						\vdash	<u> </u>
16							35	··· · · · · · · · · · · · · · · · · ·				\vdash		
17							37							
18							38						\vdash	
19							39							
20							40							
Date Reviewed	i	RS Supe	rvisio	n		· · · · · · · · · · · · · · · · · · ·	Print Na	me	/	Signatur	<u> </u>			ıp#

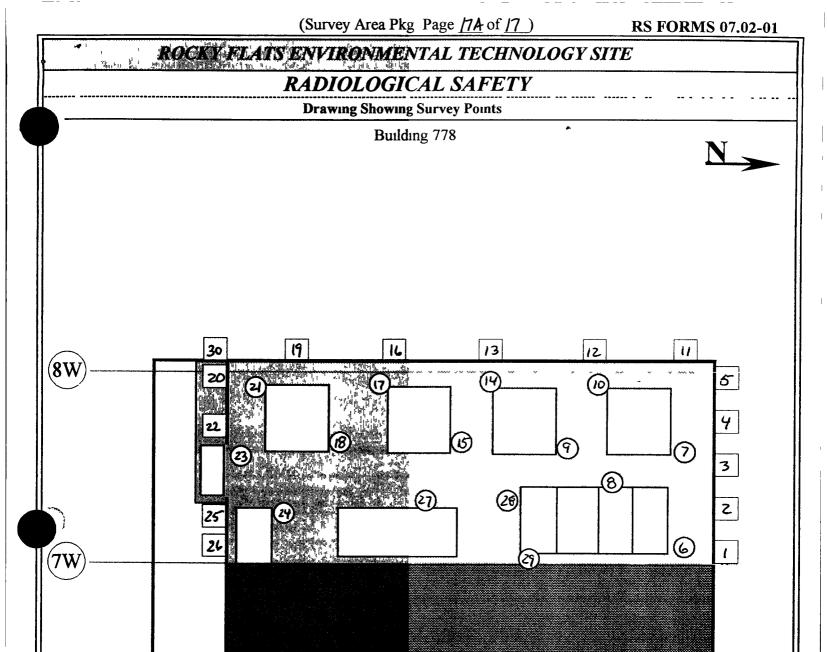


	ENTAL TECHNOLOGY SITE		
IN:	STRUMENT DATA		
fg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination
Iodel Sac-4	Model Sac-4	Model Electra	Building 778
Senal # 846	Serial # 1054	Serial # 1518	Location West - CA Survey Area C
Cal Due 8-1500	Cal Due 8 23 60	Cal Due 6-29-00	Purpose Reconnaisance Level Characterization
Bkg Oucom	Bkg b.6 cym	Bkg 10cpm	26 2-2 126//
Efficiency 33%	Efficiency 33%	Efficiency 21 86%	RWP#
MDA Bildym	MDA 163 dom	MDA 94 0Pm	Date <u>5-8-00</u> Time <u>Days</u>
Mfg Eberline	Mfg Eberline	Mfg NETech	
Model BC-4	Model BC-4	Model Electra	
Senal # 959	Serial #	Serial # 3265	
Cal Due 7-19-09	Cal Due	Cal Due 7-3-00	
Bkg 45 C, RL 54-0	Bkg	Bkg 3 0 Cl2m	
Efficiency 25%	Efficiency 25%	Efficiency 21.01%	- 1
MDA 1653.4 1454.00	MDA NA	MDA 94 DPM	
	/ Walls < 2 meters		points
1 m ² scans, 1 m ²	inute pats and swipe	es See map for lo	cations

SUR	VEY	RESUL	TS

			2.3.2	XVDX.		= =			
Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	ovable Beta	Total Alpha
$\frac{1}{1}$	Wall	0	-8	-6	16	Wall	0	4	-6
2		0	14	-6	17	Floor	0	20	30
3		0	-4	-6	18	Floor	3	-48	36
4		0	-12	٥	19	Wall	0	-28	۷ .
5	Wall	0	ay	0	20	Wall	0	-20	4
6	Floor	0	-44	26 616 8 81541	· 21	Floor -	٥	·8	84
7		0	-32	18	22	Wall	0	36	4
8		6	12	84	23	Floor	3	24	24
9		0	0	54	24	Floor	0	4	8628
10	Floor	6	20	6	25	Wall	3	-8	30
11	Wall	0	8	- 12	26	Wall	3	-24	24
12	1	3	-12	0	27	Floor	3	-36	54
13	Wall	0	32	12	28	1	3	4	48
14	Floor	O	16	6	29	Floor	0	-16	12
5	Floor	0	-32	18	30	Wall			

Date Reviewed: 5-8-00 RS Supervision:



-R.M.A.



-C.A.

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE INSTRUMENT DATA Contamination **Survey Type** Mfg Eberline Mfg NeTech 'fg Eberline 778 Building Iodel Sac-4 Model Sac-4 Model Electra Location West- CA Survey Area C Serial # 846 Serial # 1054 Serial # 15/8 Reconnaisance Level Characterization Cal Due <u>8-23-60</u> Purpose Cal Due <u>8-15-0</u>0 Cal Due 6-29-00 Bkg 1.c cpm Bkg Occom Bkg orbean RWP # 00767 1264 Efficiency_33%_ Efficiency 33% Efficiency 21,86% MDA 94 000 MDA <u>8.26pm</u> MDA 16330 pm Pm Date 5-4 60 Time Mfg Eberline Mfg Eberline 1 Mfg NA Model BC-4 Model BC-4 Model Serial # 959 Serial # Serial # Cal Due Cal Due Cal Due 7-19-00 Bkg 45cpm Bkg Bkg Efficiency 25% Efficiency 25% Efficiency MDA 103.4dom MDA MDA Comments Floor / Walls < 2 meters Biased survey points 1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

			SU	RVEY	KESUI	LIS			
Swipe	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
$\frac{1}{1}$	under washer	3	36	72	16	NA			
2	under deck plate	0	92	30	17				
3	Drain	0	4	78	18				
4	under washer	3	-36	12	19				
5	Drain	3	-36	132	20				
6	under washer	6	-12	36	21				
7	Cint trap	0	-36	28	22				
8	Lint trap	6	12	54	23				
9	under washer	0	-36	24	24				
10		3	-44	84	25				
11	END OF SURVEY			NA	26				
12					27				
13					28				
14					29				
5	NA				30				NA

Date Reviewed 5-8-00 RS Supervision:

Rev 02/00 964

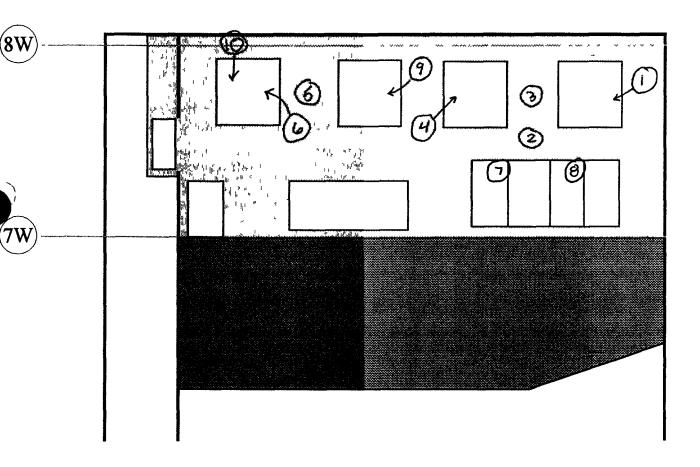
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Building 778



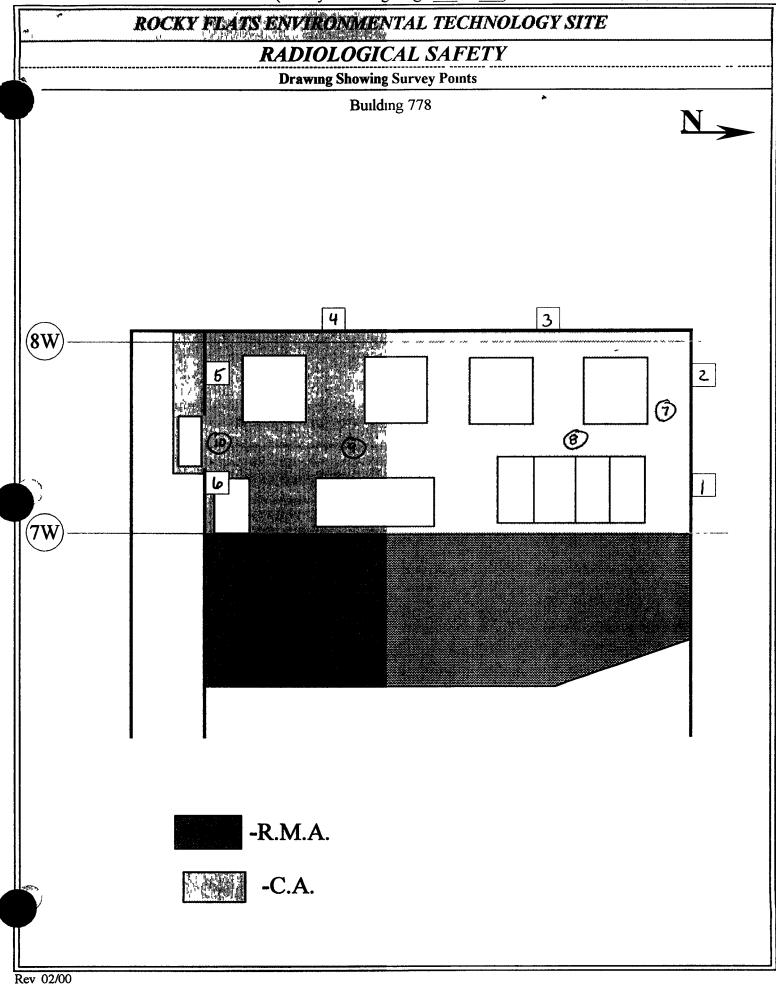


-R.M.A.



-C.A.

1	f f	ROCKY FILA	TS E	VZ	ONM.	ENTA	L TECHNOLOGY SITI	3	,	
		STRUMENT DAT	'A			9c _	- Contamination		************	
_	Eberline	Mfg Eberline					ey Type Contamination	1		
	el Sac-4	Model Sac-4	-	del Elec		Build	ing <u>778</u> ion <u>West-CA</u>	Surve	y Area	<u> </u>
	1# <u>846</u> Due <u>8-15-00</u>			ial # <u>12</u> Due <u>5</u>		Purno	Reconnaisance Level (Surve Charact	erizati	on on
	00 com	Bkg 0.6 4pm		3.0		Tupe	sc <u>recommendation</u> sover			
	iency 33%	Efficiency 33%		ciency		RW	P# 007071204			
	8.2 dpm	MDA 16.3 dpm		A <u>94</u>			5-4-00 Time _	Рm		
Mfg	Eberline	Mfg Eberline V	'⊁ Mfs	3	1/4					
_	el BC-4	Model BC-4		del	1	DCT	SPCloud SPClou	0		
Sema	al # <u>959</u>	Serial #	Sen	al#		I KC	Print name / Signatu	ire		
Cal l	Due 7/9-00	Cal Due	Cal	Due	<u> </u>		_			
	15cpm	Bkg	Bkg			RCT	Relinente Bolinen	dn.		
	eiency <u>25%</u>	Efficiency 25%		ciency_			Print name / Signatures	re		:
	A 103.4 dom				/A	<u> </u>				
		g / Walls > 2 met				oints				
	minute pats ar	nd swipes See r	nap tor	locatio	ons					
			*							
				SU	RVEY	RESUI	LTS			
Swipe	Location\Desc	rantion	Rem	ovable	Total	Swipe	Location\Description	Remo	ovable	Total
#	(Results in DPM/	(100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
1	Wall >	2 m	0	-48	٥	16	NA			
2	1		0	72	-6	17				
3			6	4	4	18				
4			3	0	-6	19				
5	<u></u>		0	-40	-12	20				
6	Wall >	2m	6	12	12	21		-		
7	Ceiling		0	72	-12	22				
8			0	-48	-6	23				
9			6	-32	0	24				
10	Ceiling	i	3	4	-12	25				
11	•	f survey			NA	26				
12						27				
13						28				
14						29				
<i>i</i> 5	NA					30				NA
Date	Reviewed 5	-8-00 RS S	upervis	ion: _	<i>A/1</i>	//hoc	ne Signature		ыпр п	-



967

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

INSTRUMENT DATA								
ffg <u>Eberline</u>	Mfg Eberline	Mfg NeTech						
Model Sac-4	Model Sac-4	Model Electra						
Serial # 846	Serial # 1054	Serial # 1518						
Cal Due 8-15-00	Cal Due 8-23-60	Cal Due 6-29-00						
Bkg OO com	Bkg O.Lepus	Bkg 1.0 cpm						
Efficiency_33%_	Efficiency 33%	Efficiency 21868						
MDA Biz dym	MDA <u>/ሬ.3</u>	MDA 94 DPm						
Mfg Eberline	Mfg Eberline/M	Mfg						
Model BC-4	Model BC-4	Model						
Serial # <u>959</u>	Serial #	Serial #						
Cal Due 7-19 00	Cal Due	Cal Due						
Bkg 45cpm	Bkg	Bkg						
Efficiency 25%	Efficiency/25%	Efficiency						
MDA 103,4	MDA NA	MDA NA						

Comments Equipment Biased survey points

1 minute pats and swipes See map for locations

Survey 7	Гуре _	Contami	<u>nation</u>
Building	778	>	
Location	Wes	t - CA	Survey Area C
Purpose			Level Characterization
אַ מעצמ	<u>ለ</u> ስጋ /	7 1701	

RWP# <u>60767 1204</u>

Date 54-00 Time Days

SURVEY RESULTS

IL			SURVET RESULTS							
	Swipe	Location\Description		ovable	Total	Swipe	Location\Description		ovable	Total
L	_ #	(Results in DPM/100cm ²)	Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha
	y_1	Washer	0	40	18	16	Inside Dryer	0	lle	54
ľ	2		6	0	48	17		3	-8	24
l	3.		3	20	84	18	Inside Dryen	0	32	30
	4		0	-20	30	19	From Dryer	0	28	24
L	5		0	24	66	20	Dryer	3	12	-12
L	6		9	16	42	21	Duct -	0	36	18
L	7	Washer	3	32	6	22	Piping	0	-4	-6
	8	Dryer	0	-16	48	23	Duct	0	-4	12
	9	1	0	28	26	24	Light	0	-20	-6
L	10		6	-8	48	25	Duct	0	-24	-6
	11	Dryer	3	-4	474	26	Top Dryer	0	-12	-12
	12	Table	3	8	30	27	Vent pipe	0	- 12	24
	13	Dryer	3	12.	24	28	Steam pipe	4	4	30
1	14	Inside Dryer	0	-36	66	29	Piping	0	40	6
	25	Dryer	3	4	52	30	Piping	0	40	6

Date Reviewed: <u>5-8-00</u> RS Supervision:

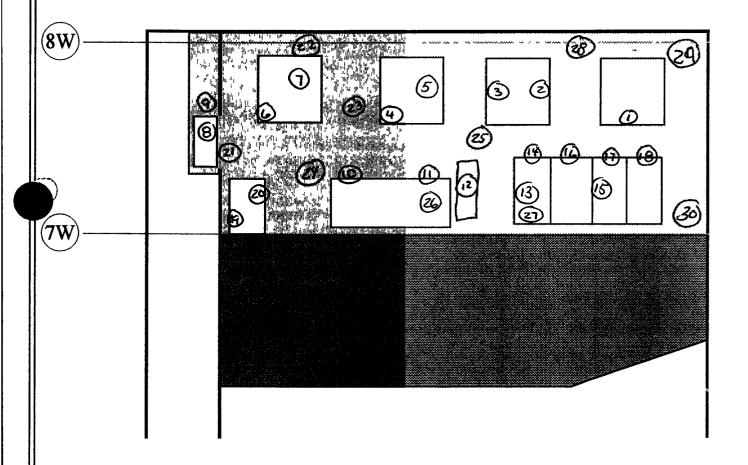
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Building 778





-R.M.A.



-C.A.

Rev 02/00

SURVEY PACKAGE TRACKING FORM

Package ID: 2000-0002 Survey Area: D		Building 778 (EXTERIOR/ROOF)		
		Survey Unit N/A		
Initiator/ Date	Release Date	Validation Date	Closure Date	
9 2/24/00	3/10/00	d 5-4-00	do 5-4-00	
		_		

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 2000-0002		Building 778 (EXT/ROOF)		Type 2		
Survey Area. D		Survey Unit N/A		Area (m²) N/A		
Survey Unit Description External surfaces/roof of building 778						
Survey Type.			Classification			
RLC Survey X	FSS □		Class 1 □ Class	Class 1 Class 2 Class 3 Unknown 2		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
30	10	0	0	0	40	
Building		Туре		Survey Area		
Survey Unit			Area (m²)			
Survey Unit Description:						
Survey Type			Classification			
RLC Survey □ FSS □			Class 1 □ Class 2 □ Class 3 □ Unknown □		Jnknown □	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building		Туре	Survey Area			
Dunuing		туре		Survey Area		
Survey Unit		Туре	Area (m²)	Survey Area		
	cription	Туре	Area (m²)	Survey Area		
Survey Unit	cription	Туре	Area (m²) Classification	Survey Area		
Survey Unit Survey Unit Desc	FSS 🗆	Туре			Jnknown □	
Survey Unit Description Survey Type		Equipment Surface Activity Measurements	Classification		Jnknown □ Surface Activity Scans	
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface Activity	Classification Class 1 Class	2 □ Class 3 □ U Volumetric	Surface Activity	
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface Activity	Classification Class 1 Class	2 □ Class 3 □ U Volumetric	Surface Activity	
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements	FSS Biased Surface Activity	Equipment Surface Activity Measurements	Classification Class 1 Class	2 □ Class 3 □ U Volumetric Samples	Surface Activity	
Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples	2 □ Class 3 □ U Volumetric Samples	Surface Activity	
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples	2 □ Class 3 □ U Volumetric Samples	Surface Activity	
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description Survey Type RLC Survey	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples Area (m²) Classification Class 1 Class	2 Class 3 U Volumetric Samples Survey Area	Surface Activity	
Survey Unit Survey Unit Description Survey Type RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description Survey Type	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples Area (m²)	2 Class 3 U Volumetric Samples Survey Area	Surface Activity Scans	

SURVEY PACKAGE COVER SHEET

Package ID: 2000-0002	Building 778 (EXTERIOR/ROOF)				
Survey Area: D	Survey Unit N/A				
Survey Unit Description: External surfaces/roof	of building 778				
Building Information:					
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey				
Building Type Type 1 Type 2 X Type 3 Type 3					
Classification Class 1 Class 2 Class 3 Un					
Contaminants of Concern Plutonium X Uranium X O	ther LI				
Justification for Classification: N/A					
Special Support Requirements: Ladder, manlift, scaffolding, and/or remote reach tools and					
instrumentation may be required for access into	Overnead areas — use caudon in overneads				
Special Safety Precautions: Access to overhead areas may require additional controls Review RWP requirements and surveys prior to entry Use caution when working in overheads					
Isolation Controls:					
Level 1 🗆 Level 2 🗆 N/A X					
Labeling Requirements: NONE					
Survey Package Implementation:					
	3/7/00				
	N/A				
	Date				
	3/9/00 Pate				
	5-4-00				
	Date N/A				
	5/4/00				

SURVEY PACKAGE SURVEY/SAMPLING INSTRUCTIONS FORM

Package ID. 2000-0002		Building 778 (EXTERIOR/ROOF)				
Survey Area: D		Survey Unit N/A				
Survey Unit Descri	ription: External surfaces/roof of buildi	ng 778				
Minimum Survey/Sampling Measurement Requirements						
Measurement	Number and Type	Comments				
Surface Activity Measurements	ROOF/EXTERIOR WALLS 30 uniformly distributed survey points as follows - 8 survey points distributed uniformly acreeach of the North and South exterior wall (16 points total for N/S walls) - 1 point each on East and West walls (2 points total for E/W walls) - 12 survey points on roof where locations can be safely accessed (6 per North and 6 per South half) 10 biased survey points on roofs and wall at the following types of locations - Exits of roof drains/downspouts - Roof exhaust vents/duct work and capped roof openings - Other areas of potential concern based on RCT judgement	SEE NOTE 4				

Package ID: 2000	-0002	Building 778 (EXTERIOR/ROOF)				
Survey Area · D		Survey Unit N/A				
Survey Unit Descr	ription• External surfaces/roof o	f building 778				
	Minimum Survey/Sampling	Measurement Requirements				
Measurement	Number and Type	Comments				
Surface Scanning	ROOF/EXTERIOR WALLS 40 1 m ² surface scans shall be taken at location identified for surface activity measurements on walls and roof Loc found to be above the DCGL will be marked to be above the DCGL will be marked.	SEE NOTE 3				
Media Samples	None					
Volumetric Samples	NONE					
Isotopic Gamma Scans	NONE					

Package ID: 2000-0002	Building 778 (EXTERIOR/ROOF)
Survey Area: D	Survey Unit N/A

Survey Unit Description. External surfaces/roof of building 778

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2. The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3 Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received



Package ID: 2000-0002	Building 778 (EXTERIOR/ROOF)						
Survey Area: D Survey Unit N/A							
Survey Unit Description: : External surfaces/roof	of building 778						
Survey/Sample	ng Instructions						

SUPPLEMENTAL INSTRUCTIONS

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- 2 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 3 If during the performance of $1m^2$ scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The highest "elevated reading" PAT measurement found in the $1m^2$ scan area will be documented. Swipe measurements will be collected at the elevated reading location as well
- 4 If during the performance of $1m^2$ scan surveys a significant instrument response (e.g., elevated reading) is not noted, fixed (PAT) measurements and swipes will be taken from the lower left hand corner of the $1m^2$ scan area to maintain consistency in sample point locations
- 5 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 6 Due to potential impacts from beta-gamma emitters in some specified survey areas, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- 7 Where not already indicated assure that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

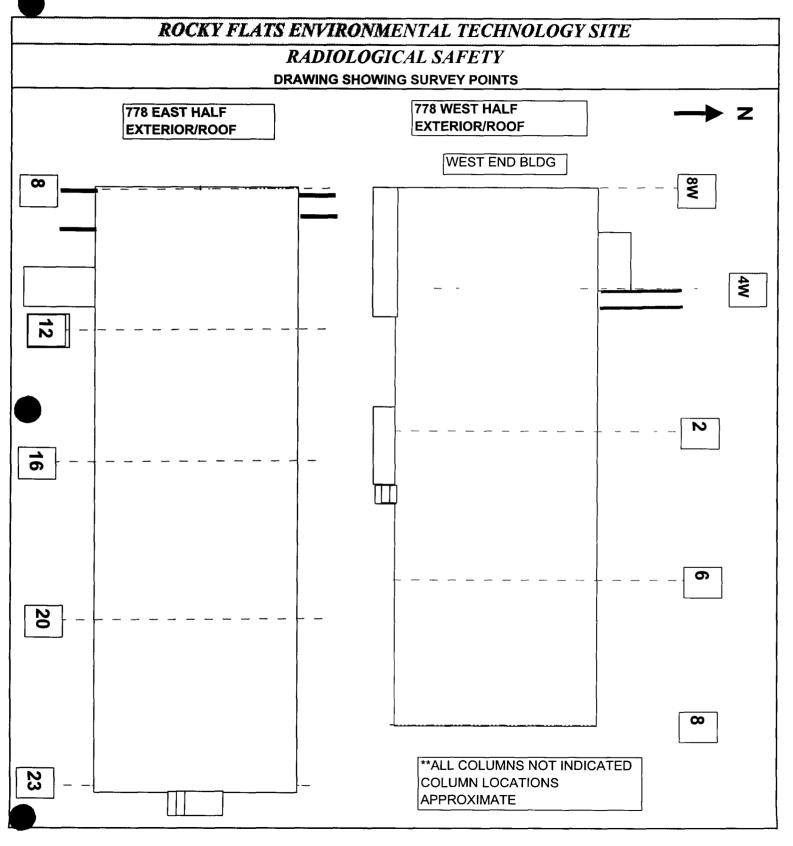
SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 2	2000-0002			Building 778 (EXTERIOR/ROOF)					
Survey Area	D			Survey Unit N/A					
Change #		Descr		PRE					
	REPLACED	Pas 10-13	w/N	EW SURVEYS/MAPS	d 5-4-00	1158			
			· · · · · · · · · · · · · · · · · · ·						
									
				:					
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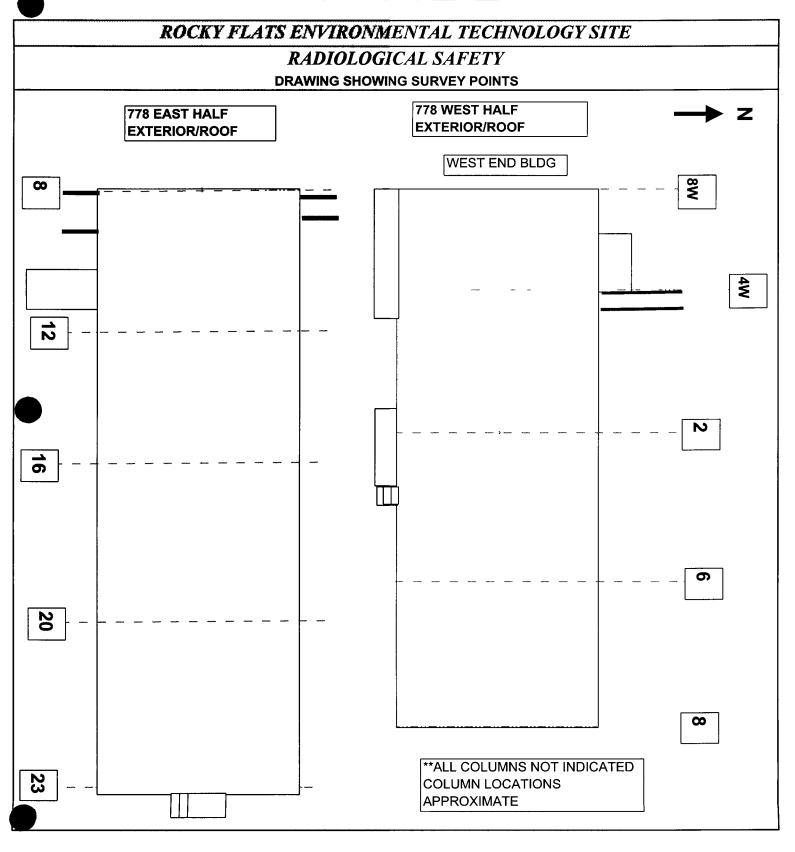
SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID. 2000-0002	Building	g 778 (EXTERIO	R/ROOF)
Survey Area· D	Survey	Unit N/A	
Survey Type. Reconnaissance Level Characterization	on Survey X	Fınal Status Surv	еу 🗖
All Documentation Reviewed for Completion		RCT Supervisor	PRE
Scan Surveys		1	do
Total Activity Surveys		S	d-
Exposure Rate Surveys		NA	NA
Removable Surveys		S	d
Media Samples		NA	<i>N</i> 4
Volumetric Samples		NA	NA
All Surveys and Samples Accounted For		RCT Supervisor	PRE
Scan Surveys			d-
Total Activity Surveys		1	do
Exposure Rate Surveys		NA	NA
Removable Surveys		S	d-
Media Samples		NA	NA
Volumetric Samples		NA	NA
Comments			
			5.2.80
			5-4-00
			Date
			5/1/00 Date

The state of the s	ROCKY	FLATS EN	<i>NTRE</i>	DNMI	INT.	AL TECHNOLOGY SITE			
	INSTRUMEN'	Γ DATA		****					
Mfg	Mfg	Mfg		- 1		ey Type CONTAMINATIO)N		
Model	Model	Model				ling			
Senal#	Serial#	Serial#			Loca				
Cal Due	Cal Due	Cal Due		-	Purpo	ose Reconnaisance Level Chara	cterization		
Bkg		Bkg		-					
Efficiency	Efficiency	Efficiency		-	RWP	· #			
MDA	MDA	MDA		-	_	_			
		2.60			Date	Time	<u> </u>		_
Mfg	Mfg	Mfg		-	D CT	,		,	
Model	Model	Model		-	RCT_				
Serial#	Serial#	Serial#		-		Print name Si	gnature	En	np#
Cal Due	Cal Due	Cal Due		-]	RCT	,		,	
Bkg	Bkg	Blog		-	KCI_	Print name Si	gnature		1p #
Efficiency MDA	Efficiency MDA	— Efficiency MDA		-		Frint name Si	gnature	EII	ıp #
Comments				VEX					-
oint	Location/Description	Remov		$\overline{}$	Point	Location/Description	Removab	_	rect
#	(Results in DPM/100CM ²)	Alpha	Beta Alpi	ha Beta	#	(Results in DPM/100CM ²)	Alpha Be	ta Alpha	a Beta
1				+	21	\			┼
2					22	\		_	
3				+	23				┼─
4				4	24				
5				4-4	25			-	┼
6					26				┼—
7					27			_	
8					28				↓
9				+	29				┼
10				-	30			-	├—
11			_		31			_	}—
12					32			4	┼—
13				_	33			+	
14				+	34				┼─
15			_	-	35		\leftarrow		├
16				+	36		$\rightarrow \downarrow \rightarrow$		┼—
17					37		$-\lambda$		┼
18					38		-++		┼—
19				-	39		-+	-	┼─
20					40			Ч	<u> </u>
Date Reviewe	edI	RS Supervision	n		rint N	Name Signatu		En	np #



	ROCKI	TDATA													
lfg	INSTRUMEN Mfg						Survey	Туре	CONT	ramin <i>a</i>	TION				
Model	Model	Mfg Mod	 lel				Building	70		7 417411 12					
Serial#	Serial#		al#	*****			Location								
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Bkg	Bkg	Bkg								-					
Efficiency	Efficiency	Effic	ency				RWP#								
MDA	MDA		A					·							
							Date				Time				
Mfg	Mfg	Mfg													
Model	Model		lel				RCT								
Serial#	Serial#	Seria	_					Print i	name		Signat	ure		Em	p #
Cal Due	Cal Due		<u>Due</u>				RCT			,				,	
Bkg Efficiency							KCI	Print i	nome		Signat	1170		Em	n i
MDA	Efficiency MDA	—— Efficie		_				FIIIL	name		Signat	.ui C		וווכו	ıp n
					O.A.		RESULT	<u>. 5</u>							_
oint	Location/Description		Remo	vable	Dire	ect	Point	Lo	cation/De	scription		Remo	ovable	Dıı	rect
oint #	Location/Description (Results in DPM/100CM ²)			_	Dıre Alpha		l I		cation/Des	•			ovable Beta		
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1 2				_			# 21 22			•			Т		
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1 2 3 4				_			# 21 22 23 24			•			Т		
1 2 3 4 5				_			# 21 22 23 24 25			•			Т		Be
1 2 3 4 5				_			# 21 22 23 24 25 26			•			Т		
1 2 3 4 5 6 7				_			# 21 22 23 24 25 26 27			•			Т		
1 2 3 4 5 6				_			# 21 22 23 24 25 26 27 28			•			Т		
1 2 3 4 5 6 7 8				_			# 21 22 23 24 25 26 27			•			Т		
1 2 3 4 5 6 7 8				_			# 21 22 23 24 25 26 27 28 29			•			Т		
1 2 3 4 5 6 7 8 9				_			# 21 22 23 24 25 26 27 28 29 30			•			Т		
1 2 3 4 5 6 7 8 9				_			# 21 22 23 24 25 26 27 28 29 30 31			•			Т		
1 2 3 4 5 6 7 8 9 10 11 12 13 14				_			# 21 22 23 24 25 26 27 28 29 30 31 32			•			Т		
1 2 3 4 5 6 7 8 8 9 10 11 12 13 14 15				_			# 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35			•			Т		
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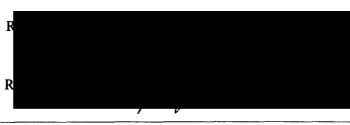
982

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

IN	INSTRUMENT DATA								
Mfg Eberline	Mfg Eberline	Mfg NeTech							
Model Sac-4	Model Sac-4	Model Electra							
Serial # 846	Senal # 1054	Senal # 1518							
Cal Due 8 1500	Cal Due 8-23-00	Cal Due <u>62900</u>							
Bkg 0.20pm	Bkg 0,3 cpm	Bkg 2.0 cpm							
Efficiency 33%	Efficiency 33%	Efficiency 12/84							
MDA 12.9 dpm	MDA 13.9 dpm	MDA 94 dpm							
Mfg Eberline	Mfg Eberline	Mfg NE Tech							
Model BC-4	Model BC-4	Model Electra							
Serial # <u>959</u>	Serial # 833	Serial # /233							
Cal Due 7-19 00	Cal Due 7-14-00	Cal Due <u>5-11-00</u>							
Bkg 40cpm	Bkg 36 cpm	Bkg o.o.eom							
Efficiency 25%	Efficiency 25%	Efficiency .2013							
1010									

Survey '	Гуре _	Con	taminati	on
Building		•		
Location	Exte	hion	Roof	Survey Area A
Purpose	Reco	nnais	ance Leve	l Characterization
RWP#	007	07 12	04	

Date 4-27 5-1-00 Time Days



MDA 98 / dom MDA 93.7 dom MDA 94 dom

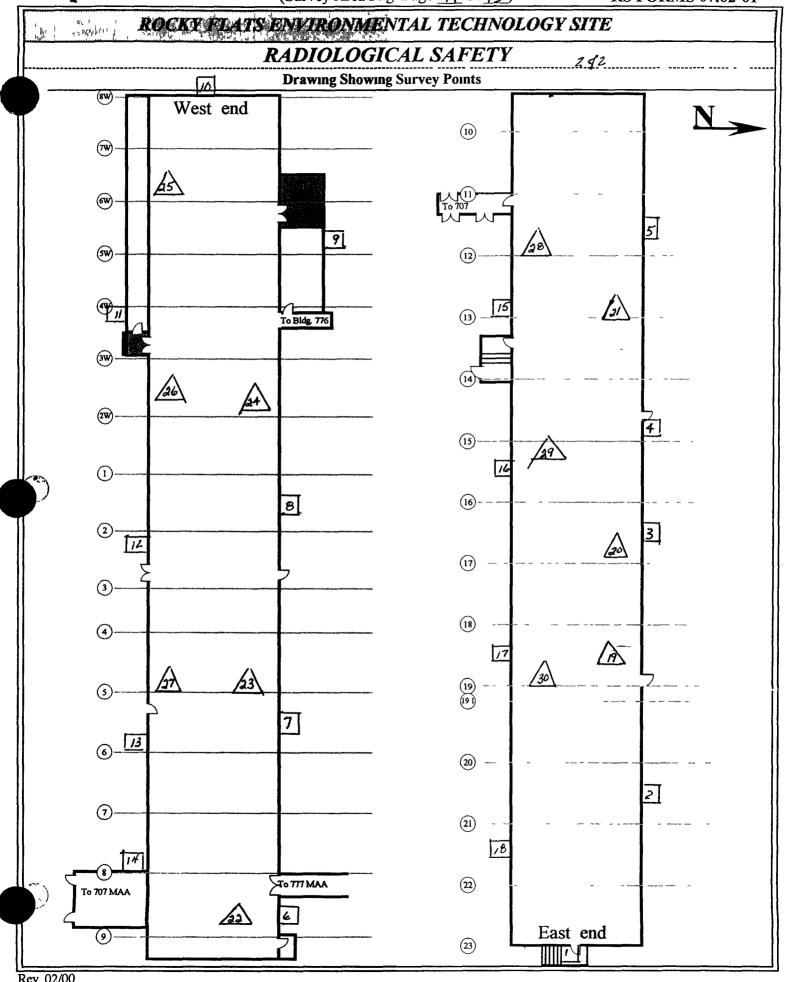
Comments Roof / Exterior Walls < 2 meters Unbiased survey points /42

1 m² scans, 1 minute pats and swipes See map for locations

SURVEY RESULTS

IL		DOKYET RESULTS									
H	Swipe	Location\Description	Rem	ovable	Total	Swipe	Location\Description	Rem	ovable	Total	
IJ	#	(Results in DPM/100cm ²)	Alpha	Beta	Alpha	# #	(Results in DPM/100cm ²)	Alpha	Beta	Alpha	
	1	Wall<2m	0	12	24	16	Wall < 2m	6	-4	132	
	2	jt ji	0	32	42	17	/I II	3	- 32	78	
	3	n n	0	36	60	18	11 11	3	40	40	
	4	Ji 1)	0	4	60	19	Roof	3	12	66	
	5	ti ji	0	28	52	20	"	0	20	72	
	6	// 11	0	-16	102	21	"	3	32	102	
	7	11 1)	0	12	42	22	<i>11</i>	3	46	156	
	8)ı jı	0	40	42	23	//	3	-12	156	
	9	l) ji	0	-4	24	24	//	0	16	150	
	10	n n	3	-28	60	25	"	0	-4	24	
	11	μ μ	3	16	30	26	"	٥	20	154	
	12	" "	0	-28	24	27	,,	0	ક	222	
	13	μ μ	6	-/2	84	28	11	0	-12	144	
	14	ון ון	0	28	54	29	11	٥	-8	114	
	15	11 11	0	48	107	30	11	6	16	48	

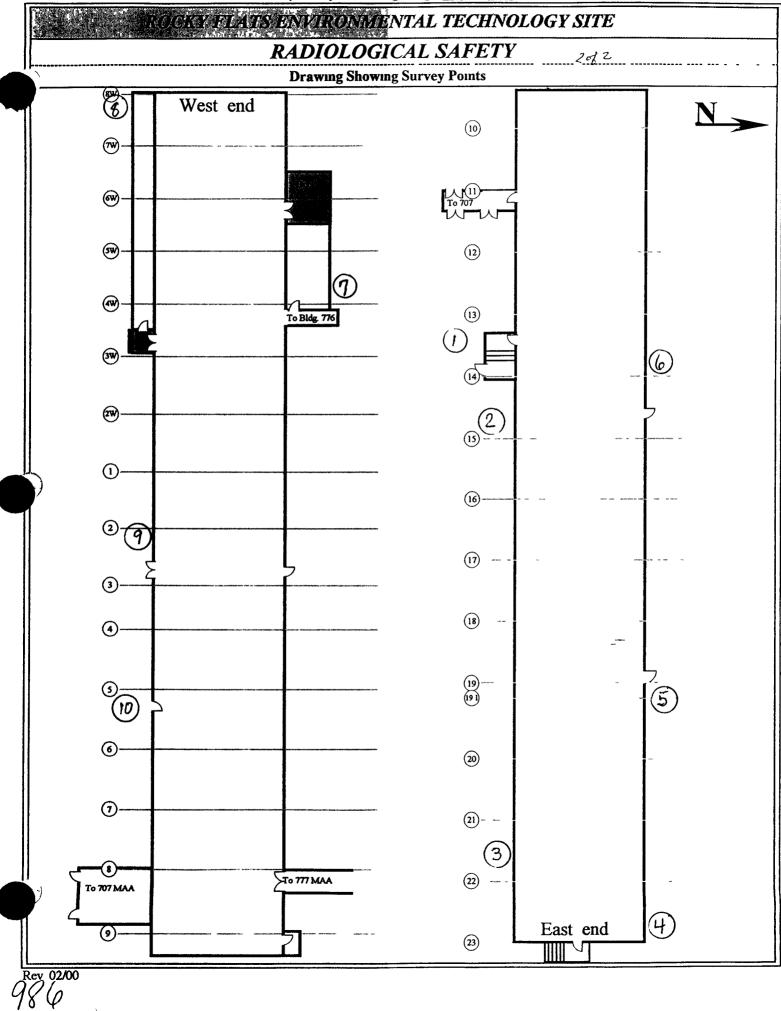
Date Reviewed: 5-2-00 RS Supervision:



Rev 02/00

Z		ROCKTORILA	ZS F.		ďM.	ENT	AL TECHNOLOGY SITE	<u> </u>	
		TRUMENT DAT				-7	Cartamination		
		Mfg Eberline	-	g WeT			vey Type Contamination	i —————	
		Model Sac-4	-	odel Alec	tra	4	ling 778	C A-	
	al# <u>846</u> S		Ser	rial #	7.	Local	tion <u>Exterior</u> Reconnaisance Level (Survey Are	ea D
		Cal Due <u>8-23-0</u>		Due _		Purpo	ose Recommandance Level C	Maraciciiza	ПОП
		Bkg <u>0,2 cpm</u>		g		RW	P# 007071204		
		Efficiency 33%	-	iciency_		1	1 #		
MU	A 11.5 dpm N	MDA 12.9 dp	in Mil)A	+	Date	5-1 52-00 Time 1)ays	
Mfg	<u>Eberline</u> M	Mfg Eberline	Mf	g <i>NE 7</i>	Tech				
	del <u>BC-4</u> N	Model BC-4	Мо	del Elec					
	al # <u>959</u> S			nal # <u>/2</u>					
	Due <u>7-19-00</u> C								
Bkg	35cpm B	3kg <u>43 cpm</u>		8 810 C					
	ciency 25% E			iciency	2063				
	A 92.5 dpm N								
	ments Roof/E						10/2		
11	m ² scans, 1 minu	ite pats and swi	pes	See ma	p tor 10	ocation	18		
				SU	RVEY	RESU	LTS		
Swipe	Location\Descripti	tion	Rem	ovable	Total	Swipe	Location\Description	Removable	Total
#	(Results in DPM/100		Alpha	Beta	Alpha	#	(Results in DPM/100cm ²)	Alpha Beta	Aipha
1	Down Spout		0	8	168	16			<u> </u>
2	Drain		6	-32	48	17	\(\)		
3	Drain		Ø	32	60	18			
4	Downsport		0	20	126	19			
	Downspout		0	20	42	20			
	Grate Over	and the second s	0	-24	468	21			
	Downsport	1	0	-12	264	22			
	Downspout		0	20	120	23			
	Downspout		6	-12	294	24			
10	Roof Above Do	or	0	16	96	25	N		
11	MA.					26			
12						27			
13						28			
14						29			
15						30			
Data	Reviewed: 5	200 RSS	morvie:	ion					

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SURVEY PACKAGE TRACKING FORM

Package ID: 2000-0002	2	Building (707) 732 PIT INTERIOR					
Survey Area· E		Survey Unit. N/A					
Initiator/ Date	Release Date	Validation Date	Closure Date				
9/24/00	3/0/00	KOM 5/3/00	EM 5/15/00				
	-						
	-						
	 						

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 2000-0002		Building . (707) 7	32 PIT INTERIOR	Type 2						
Survey Area: E		Survey Unit · N/A		Area (m ²) <15						
Survey Unit Desc FIXED CONTAMINA		OF BUILDING 732 (73	2 PIT) THIS SURVEY	' AREA IS PERMANEN	NTLY POSTED AS A					
Survey Type			Classification							
RLC Survey X	FSS □		Class 1 □ Class 2 □ Class 3 □ Unknown X							
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans					
30	10	30	2	0	30					
Building		Туре:		Survey Area						
Survey Unit:			Area (m²)							
Survey Unit Desc	ription									
Survey Type·			Classification							
RLC Survey □	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown □					
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans					
	•									
Building		Туре		Survey Area						
Building Survey Unit		Туре	Area (m²)	Survey Area						
	ription·	Туре	Area (m²)	Survey Area						
Survey Unit	cription	Туре	Area (m²) Classification	Survey Area						
Survey Unit Survey Unit Desc	FSS 🗆	Туре			Unknown □					
Survey Unit Desc Survey Type:		Type Equipment Surface Activity Measurements	Classification		Unknown □ Surface Activity Scans					
Survey Unit Description Survey Type: RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface Activity	Classification Class 1 □ Class	2 □ Class 3 □ U	Surface Activity					
Survey Unit Description Survey Type: RLC Survey Random/Uniform Surface Activity	FSS Biased Surface Activity	Equipment Surface Activity	Classification Class 1 □ Class	2 □ Class 3 □ U	Surface Activity					
Survey Unit Description Survey Type: RLC Survey Random/Uniform Surface Activity Measurements	FSS Biased Surface Activity	Equipment Surface Activity Measurements	Classification Class 1 □ Class	2 □ Class 3 □ U Volumetric Samples	Surface Activity					
Survey Unit Description Survey Type: RLC Survey Random/Uniform Surface Activity Measurements Building	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 □ Class Media Samples	2 □ Class 3 □ U Volumetric Samples	Surface Activity					
Survey Unit Survey Unit Description Survey Type: RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 □ Class Media Samples	2 □ Class 3 □ U Volumetric Samples	Surface Activity					
Survey Unit Description Survey Unit Description Survey Type: RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description	FSS Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples Area (m²)	2 □ Class 3 □ U Volumetric Samples Survey Area	Surface Activity					
Survey Unit Description Survey Type: RLC Survey Random/Uniform Surface Activity Measurements Building Survey Unit Survey Unit Description	FSS [] Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Classification Class 1 Class Media Samples Area (m²)	2 □ Class 3 □ U Volumetric Samples Survey Area	Surface Activity Scans					

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SURVEY PACKAGE COVER SHEET

Package ID: 2000-0002	Building (707) 732 PIT INTERIOR
Survey Area: E	Survey Unit N/A
Survey Unit Description: Interior of Building 73 as a fixed contamination area	2 (732 PIT) THIS SURVEY AREA IS PERMANENTLY POSTED
Building Information:	
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey 🗆
Building Type Type 1 🗆 Type 2 X Type 3 🗖	
Classification Class 1 🗆 Class 2 🗆 Class 3 🗇 Un	known X
Contaminants of Concern Plutonium X Uranium X O	ther 🗖
Justification for Classification: N/A	
Special Support Requirements: Ladder, manli instrumentation may be required for access into	
Special Safety Precautions: Access to overhead additional controls or approvals from security made	· · · · · · · · · · · · · · · · · · ·
Isolation Controls:	
Level 1 □ Level 2 □ N/A X	
Labeling Requirements: NONE	
Survey Package Implementation:	
	3/2/00
	Date / N/A
	Date
	3/2/00
	Date
	5-3-00
	Date
	N/A
	Date
	5/15/w
	Date

Package ID: 2000-0002	Building (707) 732 PIT INTERIOR
Survey Area· E	Survey Unit N/A

Survey Unit Description • Interior of Building 732 (732 PIT) This survey area is permanently posted as a fixed contamination area

Measurement	Number and Type	Comments
ırface Activity	FLOORS/WALLS < 2 meters	SEE NOTE 1
easurements	30 uniformly distributed survey points located	SEE NOTE 2
	throughout inside of building (distributed between walls and floors)	SEE NOTE 3
	between wans and noors,	SEE NOTE 4
	NO <u>biased</u> survey points on floors/walls<2 meters **	
	(**Due to extremely small survey area size, proposed locations for biased surveys will overlap with uniformly distributed survey locations)	
	CEILINGS/WALLS > 2 meters	
	10 <u>biased</u> surveys on ceiling and walls>2 meters with focus on following areas	
	- Walls behind process/liquid lines	
	- Stained or discolored areas	
	- Areas around pipe or other penetrations	
	EQUIPMENT	
	30 biased survey points on equipment with focus on	
	- Tank(s)	
	- Piping/pumps associated with tank(s)	
	- Ventilation exhaust duct(s)	
	- Equipment having known spills or stains	
	- On overhead piping (where locations are accessible)	

Package ID: 2000-0002	Building (707) 732 PIT INTERIOR
Survey Area: E	Survey Unit N/A

Survey Unit Description • Interior of Building 732 (732 PIT) THIS SURVEY AREA IS PERMANENTLY POSTED AS A FIXED CONTAMINATION AREA

	Minimum Survey/Sampling Measure	ment Requirements
Measurement	Number and Type	Comments
Surface Scanning	FLOORS/WALLS < 2 meters 30 1 m² surface scans shall be taken at each location identified for surface activity measurements. Locations found to be above the DCGL will be noted CEILINGS/WALLS > 2 meters. NONE EQUIPMENT. NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4
Media Samples	2 paint samples taken on floors beneath tanks/equipment	SEE NOTE 5
Volumetric Samples	NONE	
Isotopic Gamma Scans	NONE	

Package ID: 2000-0002	Building (707) 732 PIT INTERIOR
Survey Area· E	Survey Unit N/A

Survey Unit Description Interior of Building 732 (732 PIT) This survey area is permanently posted as a fixed contamination area

Survey/Sampling Instructions

NOTE 1 • Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3. Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements, prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media sampler sample weight of media samples shall be determined prior to analysis disposition the sample in accordance with approved procedures
- Media sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238 Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

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Package ID. 2000-0002	Building (707) 732 PIT (INTERIOR)				
Survey Area: E	Survey Unit N/A				
Survey Unit Description: : INTERIOR PERMANENTLY POSTED AS A FIXED	R OF BUILDING 732 (732 PIT) THIS SURVEY AREA IS O CONTAMINATION AREA				

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- 2 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 3 If during the performance of $1m^2$ scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The highest "elevated reading" PAT measurement found in the $1m^2$ scan area will be documented. Swipe measurements will be collected at the elevated reading location as well
- 4 If during the performance of $1m^2$ scan surveys a significant instrument response (e.g., elevated reading) is not noted, fixed (PAT) measurements and swipes will be taken from the lower left hand corner of the $1m^2$ scan area to maintain consistency in sample point locations
- 5 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- 7 Where not already indicated assure that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

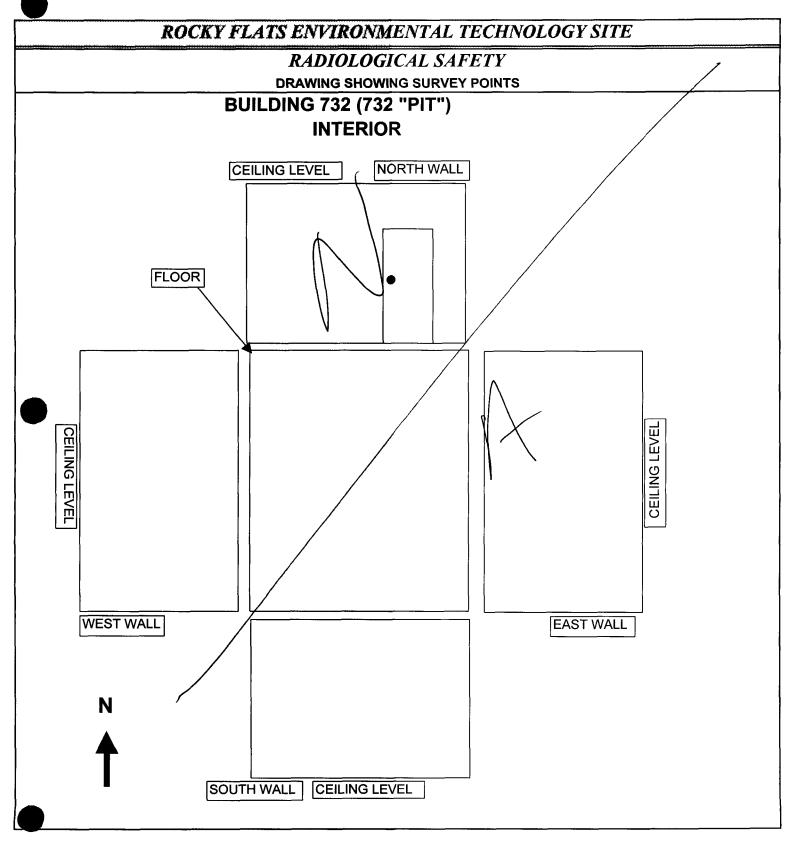
SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 2000-0002		Building (707) 732 PIT INTERIOR							
Survey Area: E		Survey Unit N/A							
Change #	Description		Initiator/ Date	PRE					

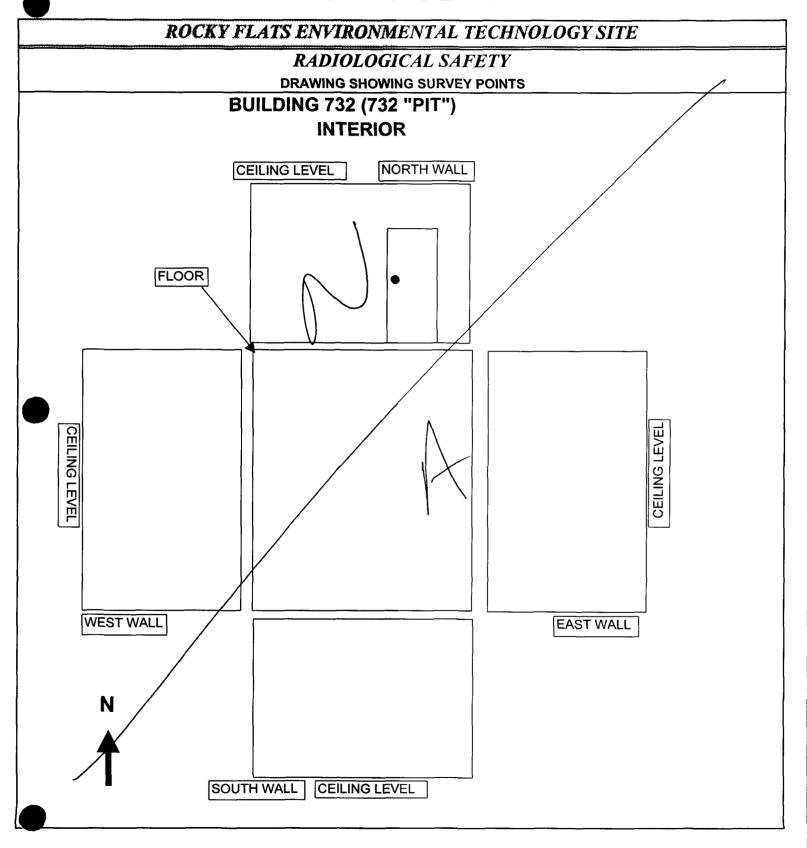
SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 2000-0002	В	Building (707) 732 PIT INTERIOR						
Survey Area. E	S	Survey Unit N/A						
Survey Type Reconnaissance Level Characte	rızatıon Sur	vey X Final Status Surve	у 🗆					
All Documentation Reviewed for Completion		RCT Supervisor	PRE					
Scan Surveys								
Total Activity Surveys								
Exposure Rate Surveys	<u> </u>							
Removable Surveys	7							
Media Samples		Λ						
Volumetric Samples								
All Surveys and Samples Accounted For	/	RCT Supervisor	PRE					
Scan Surveys								
Total Activity Surveys								
Exposure Rate Surveys								
Removable Surveys								
Media Samples								
Volumetric Samples								
Comments 732 pr + posted ARA-	Not a	Surveyed IAW	RSP 1601					
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P			5 3 00 Date \$-3-00					
P			Date					
H			5/15/10					
В			Date					
LE CONTRACTOR OF THE PROPERTY			Date					

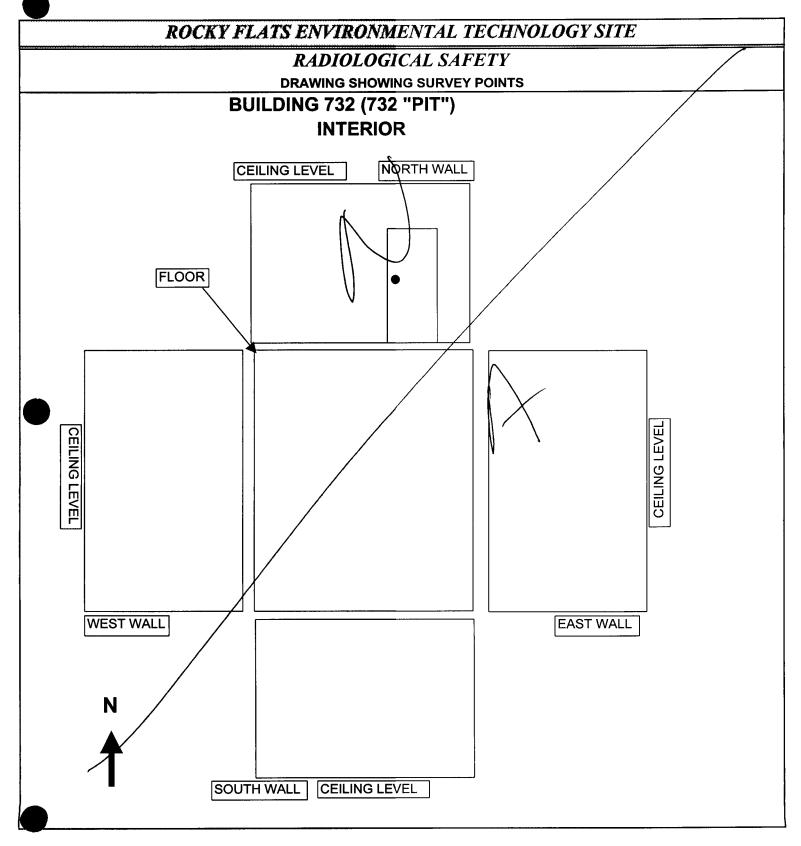
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	INSTRUMEN							······································	
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Ĭ			ſ	Da	e		Time		- '
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		INSTRUMEN	T DATA												***************************************	
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Mode		Model		lel_												
Serial		Serial#		al#				Locatio	n				,			
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Bkg .		Bkg	Bkg										7			
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SURVEY PACKAGE TRACKING FORM

Package ID 2000-0002		Building (707) 732 PIT EXTERIOR/ROOF Survey Unit N/A			
Survey Area· F					
Initiator/ Date	Release Date	Validation Date	Closure Date		
8/ 2/24/00	\$ 3/10/00	15/00	DOM 5/15/00		
	10				
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INITIAL SURVEY PACKAGE DESIGN FORM

Package ID. 200	0-0002	Building • (707) 7	32 PIT EXTERIOR	Type 2		
Survey Area F		Survey Unit N/A		Area (m ²) <15		
Survey Unit Description EXTERIOR/ROOF OF BU RADIOLOGICALLY POSTED			DING 732 (732 PI	T) THIS SURVEY	Y AREA IS NOT	
Survey Type			Classification	<u> </u>		
RLC Survey X FSS □			Class 1 🗆 Class	2 □ Class 3 □ U	Jnknown X	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
30	0	0	1	0	30	
Building		Туре		Survey Area		
Survey Unit			Area (m²)			
Survey Unit Desc	cription.					
Survey Type			Classification			
RLC Survey 🗖	FSS □		Class 1 □ Class	2 □ Class 3 □ Unknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building		Туре		Survey Area		
Survey Unit			Area (m²)			
Survey Unit Desc	cription.					
Survey Type·			Classification			
RLC Survey □	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown □	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	
Building		Type.	Survey Area			
Survey Unit			Area (m²)			
Survey Unit Description						
Survey Type			Classification			
RLC Survey □ FSS □			Class 1 □ Class	2 □ Class 3 □ U	Jnknown □	
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans	

SURVEY PACKAGE COVER SHEET

Package ID: 2000-0002	Building: (707) 732 PIT EXTERIOR/ROOF
Survey Area: F	Survey Unit N/A
Survey Unit Description: EXTERIOR/ROOF OF INOT RADIOLOGICALLY POSTED	BUILDING 732 (732 PIT) THIS SURVEY AREA IS
Building Information:	
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey
Building Type Type 1 □ Type 2 X Type 3 □	
Classification Class 1 Class 2 Class 3 Un	·
Contaminants of Concern Plutonium X Uranium X C	ther 🗖
Justification for Classification: N/A	
Special Support Requirements: Ladder, manla instrumentation may be required for access into	
Special Safety Precautions: Access to overhead additional controls or approvals from security made	
Isolation Controls:	
Level 1 🗖 Level 2 🗖 N/A X	
Labeling Requirements: NONE	
Survey Package Implementation:	
	3/2/00
	N/A
	Date
	3/2/00
	Date
	5/15/00
	Date
	N/A
	Date
	5/15/ds
	Date

Package ID · 2000-0002	Building (707) 732 PIT EXTERIOR/ROOF
Survey Area. F	Survey Unit N/A

Survey Unit Description EXTERIOR/ROOF OF BUILDING 732 (732 PIT) THIS SURVEY AREA IS NOT RADIOLOGICALLY POSTED

Measurement	Number and Type	Comments
rface Activity	ROOF/EXTERIOR WALLS	SEE NOTE 1
asurements	30 uniformly distributed survey points distributed as follows	SEE NOTE 2
	- 8 on walls (walls < 2 meters)	SEE NOTE 3
	- 12 on roof of Building 732	SEE NOTE 4
	NO biased survey points **	
	(**Due to extremely small survey area size, proposed locations for biased surveys will overlap with uniformly distributed survey locations)	
		1

Package ID 2000-0002	Building (707) 732 PIT EXTERIOR/ROOF
Survey Area: F	Survey Unit N/A

Survey Unit Description: EXTERIOR/ROOF OF BUILDING 732 (732 PIT) THIS SURVEY AREA IS NOT RADIOLOGICALLY POSTED

	Minimum Survey/Sampling Measurement Requirements					
Measurement	Number and Type	Comments				
Surface Scanning	FLOORS/WALLS < 2 meters 30 1 m² surface scans shall be taken at each location identified for surface activity measurements Locations found to be above the DCGL will be noted CEILINGS/WALLS > 2 meters NONE EQUIPMENT NONE	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4				
Media Samples	1 media sample from roof	SEE NOTE 5				
Volumetric Samples	NONE					
Isotopic Gamma Scans	NONE					

Package ID: 2000-0002	Building (707) 732 PIT EXTERIOR/ROOF
Survey Area: F	Survey Unit N/A

Survey Unit Description EXTERIOR/ROOF OF BUILDING 732 (732 PIT) THIS SURVEY AREA IS NOT RADIOLOGICALLY POSTED

Survey/Sampling Instructions

NOTE 1. Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3. Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys

NOTE 4. Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received.

NOTE 5 For <u>each</u> media sample location, perform the following in accordance with PRO-477-RSP-16 03, "Radiological Samples of Building Media"

- RCT verify that the media sampling location is free of removable surface activity prior to media sampling If the surface contains removable contamination, then the surface shall be decontaminated prior to collecting the media sample
- RCT perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements prior to media sampling
- Media Sampler using an appropriate tool, remove the surface material to a depth sufficient to expose the base material over the entire sample area
- Media Sampler Media sample area shall be as large as the NE Electra (standard radiation detection instrument) probe area. The area of the media shall be documented at time of collection
- Media Sampler Sample weight of media samples shall be determined prior to analysis Disposition the sample in accordance with approved procedures
- Media Sampler media samples shall include analysis for Pu-239, Am-241, U-234, U-235, and U-238
- Following each media sample, the RCT shall perform and document a survey for direct contamination (alpha) and removable contamination (alpha then beta) in accordance with 3-PRO-165-RSP-07 02, Contamination Monitoring Requirements

Package ID: 2000-0002	Building (707) 732 PIT (EXTERIOR)
Survey Area F	Survey Unit N/A

Survey Unit Description: . EXTERIOR/ROOF OF BUILDING 732 (732 PIT) THIS SURVEY AREA IS NOT RADIOLOGICALLY POSTED

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS.

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- 2 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 3 If during the performance of 1m² scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The highest "elevated reading" PAT measurement found in the 1m² scan area will be documented. Swipe measurements will be collected at the elevated reading location as well
- 4 If during the performance of $1m^2$ scan surveys a significant instrument response (e.g., elevated reading) is not noted, fixed (PAT) measurements and swipes will be taken from the lower left hand corner of the $1m^2$ scan area to maintain consistency in sample point locations
- 5 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 6 Due to the significant presence of beta-gamma emitters throughout and/or adjacent to the specified survey areas, and their impact on direct field measurements for beta contamination, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- 7 Where not already indicated assure that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)

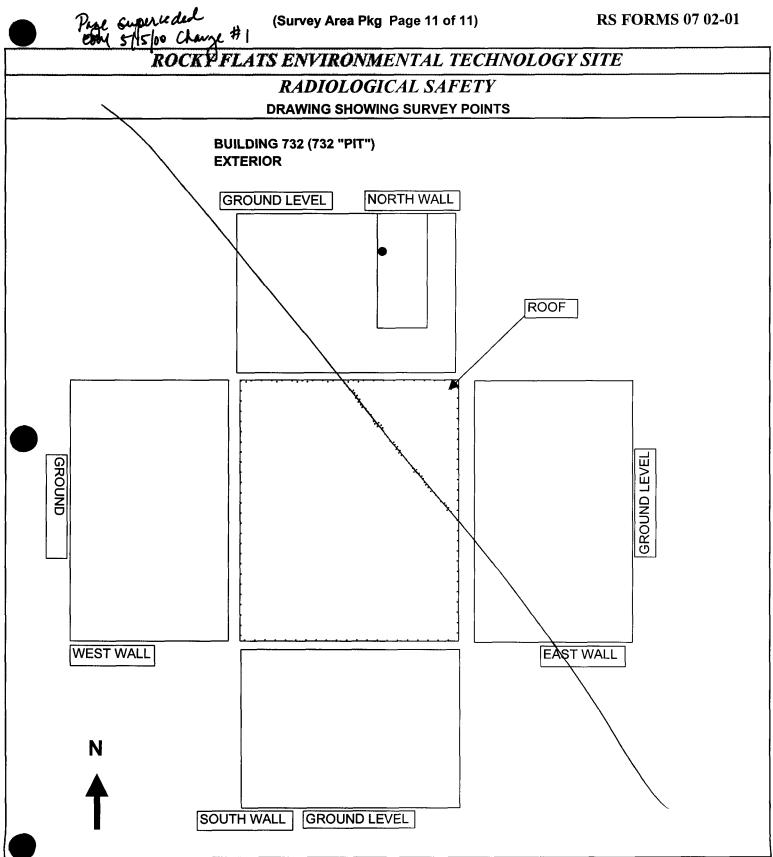
SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID:	2000-0002	Building (707) 732 PIT EXTERIOR/ROOF				
Survey Area	F	Survey Unit N/A				
Change # Description		JI	Initiator/ Date	PRE		
1	Page 11 sepleced w/ gages 11	1 ∕ •	5/15/00	ABE		
						

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID · 2000-0002	Build	ling (707) 732 PIT EX	(TERIOR/ROOF		
Survey Area· F	Surv	Survey Unit N/A			
Survey Type: Reconnaissance Level Characterizati	on Survey	X Final Status Surve	еу 🗖		
All Documentation Reviewed for Completion		RCT Supervisor	PRE		
Scan Surveys		1	EDW		
Total Activity Surveys		1	EBM		
Exposure Rate Surveys		NA	NA		
Removable Surveys		1	Konj		
Media Samples		NA O	NA®		
Volumetric Samples		NA	NA		
All Surveys and Samples Accounted For		RCT Supervisor	PRE		
Scan Surveys		l	Kony		
Total Activity Surveys		Ì	EM		
Exposure Rate Surveys		NA	NA		
Removable Surveys		A	Day		
Media Samples		NA O	NA O		
Volumetric Samples		NA	NA		
Comments D'no media samples taken, no gaint a	t breat	² uns identified in	survey package		
			5-3 00 Date		
			5-15-00		
			5/15/N		
			Date		

c.	INSTRUMEN						lo	г -	CONT		TION				
Ifg	Mfg	— Mig								TAMINA'	10,1077	_			
Model	Model	Mod	lel				Building					_			
Serial# Cal Due	Senal#Cal Due	— Seri	al# Due				Location		alcanaa	Level Cha	araatar				
							ruipose	Reconn	alsance.	Level Cli	ai acter	IZALIO	11		
Bkg	Bkg						RWP#								
Efficiency			ency A				IX VVI #								
		— NID	^ <u> </u>				Date			T	ıme				
Mfg	Mfg	Mfg					Built				11110				
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Bkg	Bkg	— Bkg					RCT			/			,	/	
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#	Location/Description (Results in DPM/100CM ²)			vable		ect	Point #	Loc	ation/Des			Remo Alpha			
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# 1 2 3 4	-			vable	Dır	ect	Point # 21 22 23 24	Loc				-			
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# 1 2 3 4 5 6 7 8	_			vable	Dır	ect	Point # 21 22 23 24 25 26 27 28	Loc				-			
# 1 2 3 4 5 6 7 8 9 10 11 1	_			vable	Dır	ect	Point # 21 22 23 24 25 26 27 28 29 30 31	Loc				-			
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# 1 2 3 4 5 6 7 8 9 10 11 12 13 13	_			vable	Dır	ect	Point # 21 22 23 24 25 26 27 28 29 30 31 32 33	Loc				-			
# 1 2 3 4 5 6 7 8 9 10 11 12 13 14	_			vable	Dır	ect	Point # 21 22 23 24 25 26 27 28 29 30 31 32 33 34	Loc				-			
# 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	_			vable	Dır	ect	Point # 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35	Loc				-			
# 1 2 3 4 5 6 7 8 9 10 11 12 13 14	_			vable	Dır	ect	Point # 21 22 23 24 25 26 27 28 29 30 31 32 33 34	Loc				-			
# 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	_			vable	Dır	ect	Point # 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36	Loc				-			
# 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	_			vable	Dır	ect	Point # 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37	Loc				-			



ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

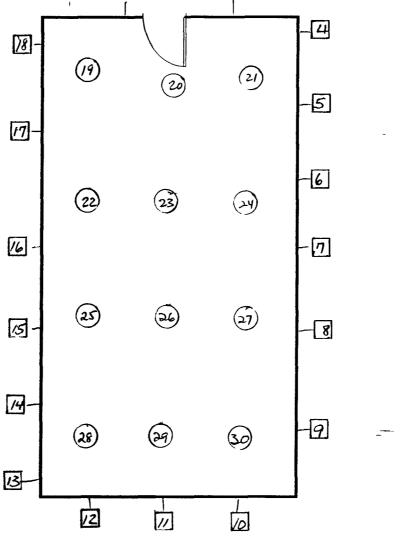
INS	STRUMENT DATA		
1fg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination
1odel_Sac-4	Model Sac-4	Model Electra	Building 732
Serial #_846_		Serial # 3260	Location 732 Pit Extreiox/Roof Survey Area F
Cal Due 8-15.00	Cal Due 8-23-00	Cal Due 7.17 00	Purpose Reconnaisance Level Characterization
Bkg 0,2 Lpm	Bkg 0,3 cpm	Bkg 1.0 opm	
Efficiency 33%	Efficiency 33%	Efficiency , 20	RWP#
MDA 129 dpm	MDA 13.9 dem	MDA 94 dpm	Date 53-00 Time Days
MfgEberline	Mfg Eberline	Mfg /	
Model BC-4	Model BC-4	Model	
	Serial # 833	Serial #	
Cal Due 7-19-00	Cal Due 7-14 00	Cal Due	
Bkg	Bkg 43 срм	Bkg	RCT N/A
Efficiency 25%	Efficiency 25%	Efficiency	Print name / Signature / Emp #
MDA 98.1 dp	MDA 101.3 dpm	MDA	Transmitted / Signature / Emp //
Comments Roof	Exterior Walls < 2	meters Unbiased	survey points -
1 m ² scans, 1 mu	nute pats and swipes	s See map for lo	cations

SURVEY RESULTS

Swipe #	Location\Description (Results in DPM/100cm ²)	Remo	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
1	Roof /Exterior Walls a.	0	-8	42	16	Roof/Exterior Ware 2m	0	-24	60
2		0	52	36	17		0	4	42
3		0	-24	72	18		0	0	18
4		6	-36	30	19		0	16	114
5		0	-8	54	20		0	16	156
6		3	12	54	21		. 0	-20	174
7		0	-12	78	22		0	-28	102
8		3	-28	102	23		O	-16	144
9		0	0	60	24		0	20	120
10		0	-8	96	25		0	-98	90
11		0	-20	84	26		0	4	108
12		3	0	84	27		0	8	84
13		0	24	90	28		0	8	156
<u> 14</u>		0	0	54	29		0	8	150
5	see map	0	-16	72	30	See man	0	-40	/32

Date Reviewed: 5.3.00 RS Supervision

(Survey Area Pkg Page | | A of | I |) RS FORMS 07.02-01 ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY Drawing Showing Survey Points Bldg.732



SURVEY PACKAGE TRACKING FORM

Package ID: 2000-0002		Building (707) T707S (INTERIOR)				
Survey Area· G		Survey Unit N/A				
Initiator/ Date	Release Date	Validation Date	Closure Date			
J 2/24/00	Jg 3/10/00	d= 5/4/00	do 5/4/00			

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID 2000	0-0002	Building (707)	Г707S (INTER)	TER) Type 1			
Survey Area G		Survey Unit N/A	7	Area (m²) ~20			
Survey Unit Desc POSTED	cription INTERI	OR OF T707S (S	TORAGE SHED)	NOT RADIOLO	OGICALLY		
Survey Type			Classification		The state of the s		
RLC Survey X	FSS □		Class 1 □ Class	2 □ Class 3 □ U	J nknown X		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
30	10	30	0	0	30		
Building.		Туре		Survey Area			
Survey Unit			Area (m²)				
Survey Unit Desc	eription.						
Survey Type·			Classification				
RLC Survey □	FSS □		Class 1 ☐ Class	2 □ Class 3 □ U	Jnknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Туре		Survey Area			
Survey Unit.			Area (m²)				
Survey Unit Desc	cription						
Survey Type			Classification				
RLC Survey □	FSS 🗆		Class 1 🗖 Class	2 ☐ Class 3 ☐ U	Jnknown 🗖		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		
Building		Type·	Survey Area				
Survey Unit			Area (m²)				
Survey Unit Description							
Survey Type			Classification				
RLC Survey □	FSS □		Class 1 □ Class	2□ Class 3□ U	Jnknown □		
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans		

SURVEY PACKAGE COVER SHEET

Package ID: 2000-0002		Building: (707) T707S (INTE	RIOR)			
Survey Area: G		Survey Unit · N/A				
Survey Unit Description: INTERIOR OF T707S (STORAGE SHED) NOT RADIOLOGICALLY POSTED						
Building Information:						
Survey Type Reconnaissance Level 0	Characterization S	Survey X Final Status Survey				
Building Type Type 1 X Type 2	Type 3 □					
Classification Class 1 🗆 Class 2 🗖						
Contaminants of Concern Plutonium	X Uranium X	Other				
Justification for Classification:	N/A					
Special Support Requirements: instrumentation may be required	•	<u> </u>				
Special Safety Precautions: Accontrols, and/or security requiren surveys on roofs or similar struct	nents Make a	ppropriate notifications prior to	o commencing			
Isolation Controls:						
Level 1 🗆 Level 2 🗖 N/A X						
Labeling Requirements: NONE)					
Survey Package Implementation	n:					
			2/0/20			
			Date			
			N/A			
			Date			
			3/8/00			
			Date			
			=lula			
			5/4/20 Date			
			N/A			
			Date			
			6/4/a			
RESS Manager Printed Name	Employee # RE	SS Manager Signature	Date			

Package ID: 2000	-0002	Building (707) T707S (INTERIOR)				
Survey Area · G		Survey Unit N/A				
Survey Unit Desc POSTED	ription: INTERIOR OF T707S	(STORAGE SHED) NOT RADIOLOGICALLY				
	Minimum Survey/Sampling	g Measurement Requirements				
Measurement	Number and Type	Comments				
Surface Activity Measurements	FLOORS/WALLS < 2 meters 30** uniformly distributed survey pointerior of T707S - 5 survey points per wall - 10 survey points per floor (**DUE TO SMALL SIZE OF THIS STI AND INACCESSIBILITY TO SURFAC CONTENTS IT MAY NOT BE POSSIBI OBTAIN PROCEDURALY REQUIRED OF SURVEY POINTS RCT SHALL OF MANY AS PRACTICABLE AND DOCUMENT OF SURVEY POINTS WILL BE REQUIRED OF SURVEY POINTS WILL B	SEE NOTE 3 SEE NOTE 4 RUCTURE, ES DUE TO LE TO D NUMBER BTAIN AS UMENT) uired due to aticipated coints				

Package ID: 2000-0002	Building (707) T707S (INTERIOR)
Survey Area: G	Survey Unit N/A

Survey Unit Description: INTERIOR OF T707S (STORAGE SHED) NOT RADIOLOGICALLY POSTED

Minimum Survey/Sampling Measurement Requirements					
Measurement	Number and Type	Comments			
Surface Activity Measurements (continued)	EQUIPMENT 30** biased survey points on fixed equipment in this structure Equipment in this structure appears to be non-fixed equipment (**DUE TO SMALL SIZE OF THIS STRUCTURE AND POTENTIAL INACCESSIBILITY TO SURFACES DUE TO CONTENTS, IT MAY NOT BE POSSIBLE TO OBTAIN PROCEDURALY REQUIRED NUMBER OF SURVEY POINTS RCT SHALL OBTAIN AS MANY AS PRACTICABLE AND DOCUMENT)				
Surface Scanning	FLOORS/WALLS < 2 meters 30 1 m² surface scans shall be taken at each location identified for surface activity measurements. Highest locations found above the DCGL shall be documented. CEILINGS/WALLS > 2 meters. NONE. EQUIPMENT. NONE.	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4			
Media Samples	NONE				
Volumetric Samples	NONE				
Isotopic Gamma Scans	NONE				

Package ID: 2000-0002	Building (707) T707S (INTERIOR)
Survey Area. G	Survey Unit N/A

Survey Unit Description: INTERIOR OF T707S (STORAGE SHED) NOT RADIOLOGICALLY POSTED

Survey/Sampling Instructions

NOTE 1: Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3. Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in these areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas. Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

Package ID · 2000-0002	Building (707) T707S INTERIOR			
Survey Area. G	Survey Unit N/A			
Survey Unit Description: : INTERIOR OF BUILDING T707S (FORMER OIL STORAGE SHED)				
NOT RADIOLOGICALLY POSTED				

Survey/Sampling Instructions

SUPPLEMENTAL INSTRUCTIONS

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- 2 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 3 If during the performance of $1m^2$ scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The highest "elevated reading" PAT measurement found in the $1m^2$ scan area will be documented. Swipe measurements will be collected at the elevated reading location as well
- 4 If during the performance of 1m² scan surveys a significant instrument response (e g, elevated reading) is not noted, fixed (PAT) measurements and swipes will be taken from the lower left hand corner of the 1m² scan area to maintain consistency in sample point locations
- 5 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 6 Due to potential impacts from beta-gamma emitters in some specified survey areas, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- 7 Where not already indicated assure that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e g, indicate which direction is North)
- Other appropriate information (e g, "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)



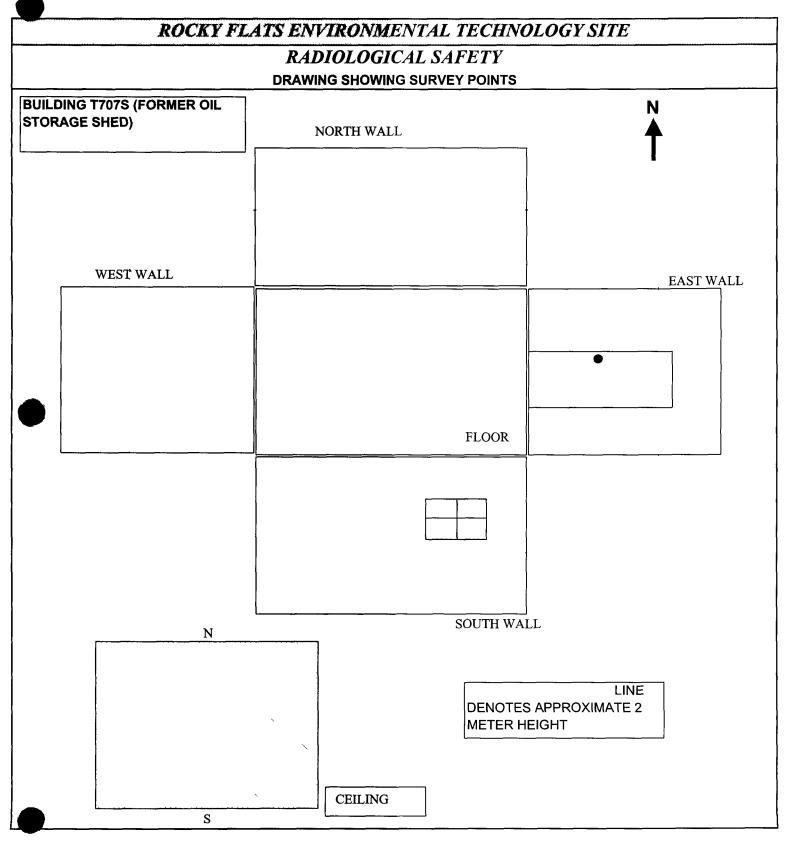
SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID· 2	2000-0002	Building (707) T	707S (INTERIO	R)
Survey Area.	G	Survey Unit N/A	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	
Change #	Description		Initiator/ Date	PRE
1	AS 10-15 SUPERCEDED		do 5/2/00	ABE

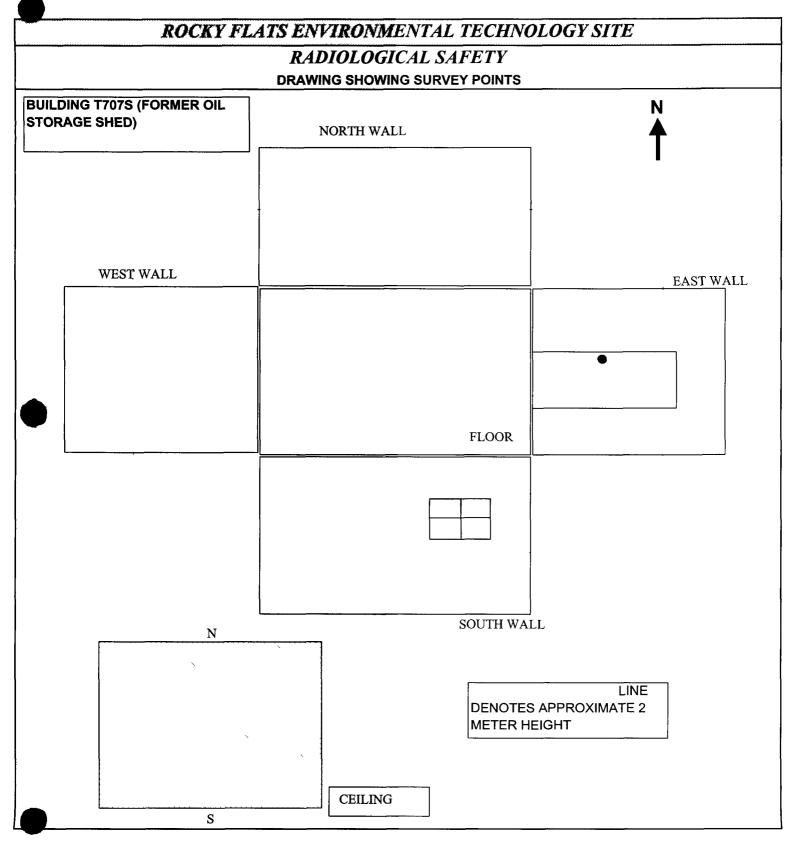
SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID: 2000-0002	Building (707) T707S (IN	TERIOR)
Survey Area: G	Survey Unit. N/A	
Survey Type Reconnaissance Level Characterization	on Survey X Final Status Surve	у 🗆
All Documentation Reviewed for Completion	RCT Supervisor	PRE
Scan Surveys	1	do
Total Activity Surveys	ì	d-
Exposure Rate Surveys	NA	NA
Removable Surveys	1	d
Media Samples	NA	NA
Volumetric Samples	NA	NA
All Surveys and Samples Accounted For	RCT Supervisor	PRE
Scan Surveys	\mathcal{L}	d
Total Activity Surveys	1	do
Exposure Rate Surveys	NA	NA
Removable Surveys	1	do-
Media Samples	NA	NA
Volumetric Samples	NA	N4
Comments		
		52.00 Date
		5-4-00
		Date
		5/4/00 Date

and a second second	ROCK	YFLAT	S E	VVI	RO)	VM.	EŇ7	AL TEC	HNOLO	FY SITE	ý			
	INSTRUMEN													
lfg	Mfg							ey Type		MINATION				
Model	Model	Mod				1	1	ding						
Serial#	Serial#	Seria				ı	Loca			* ***				
Cal Due	Cal Due		Due_			ļ	Purp	ose Recon	naisance L	evel Characte	rizatio	'n		
Bkg	Bkg		·			1	 							
Efficiency _	Efficiency		iency	_		1	RWI	'# <u></u>						
MDA	MDA	MD.	^A			į				-				
		3.40				ı	Date			Tıme				-
Mfg	Mfg	Mfg				!				,			,	
Model	Model	Mod				1	RCT						<u>/</u>	
Serial#	Serial#	Serie				1		Print	name	Signa	ture		Em	ıp#
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Bkg	Bkg	Bkg				ļ	RCT						<u> </u>	#
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MDA	MDA	<u>MD</u>												
					UR	ÆΥ	RES	ULTS						
int	Location/Description		Remo	ovable	Dıı	rect	Point		ocation/Desc		Remo	vable	Dı	rect
#	(Results in DPM/100CM ²))	Alpha	Beta	Alpha	Beta	#	(R	Results in DPM/1	00CM ²)	Alpha	Beta	Alpha	Bet
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Date Review	wed	RS Supe	rvisio	n		 j	Print 1			Signature			/ Em	\



and the Company of Com	ROCK	PLAT	S E	NИ	RO.	VM.	ENTA	L TECI	HNOLO	GY SIZ	TE .				
	INSTRUMEN														*****
Ifg	Mfg	Mfg						у Туре							
Model	Model	Mod	iel				Buıldı	ng							
Serial#	Serial#	Seri					Locati	on			_				
Cal Due	Cal Due	Cal	Due				Purpo	se Recon	naisance	Level Ch	aracter	ızatıc	on_		
Bkg	Bkg	Bkg													
Efficiency	Efficiency		iency				RWP:	[#]							
MDA	MDA	MD	A												
1							Date			1	ıme				_
Mfg	Mfg														
Model	Model	Mod	_	-			RCT_								
Serial#	Serial#							Print	name		Signat	ure		Em	ıp #
Cal Due	Cal Due		Due												
Bkg			·				RCT_				<u> </u>				
Efficiency			ency					Print	name		Signat	ure		Em	ıp #
MDA	MDA	MD	<u> </u>												
oint	Location/Description		Reme	ovable	_	rect	RESU Point		ocation/De	scription		Remo	ovable	Du	reci
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Date Reviewe							•								



c	INSTRUMEN					la r	.	CONT		· O.N.			
Ifg	Mfg	Mfg				Survey	Type	CONT	AMINATI	.ON			
Model	Model	Mod	lel			Building							
Serial# Cal Due	Serial#Cal Due	Seri	al#			Location		arsanaa I	Level Char	o o toruza tu			
Dha	Disc.	—— Cai	Due			rurpose	Recoiii	iaisance 1	zevei Citar	acter izatio)11		
Bkg Efficiency	Bkg	DKg	ency			RWP#							
MDA		— MD	A			K W I #							
						Date			Tım	ne			
Mfg	Mfg	Mfg								-			•
Model	Model	Mod	lel			RCT			/			/	
Serial#	Serial#	Seri	al#	 			Prınt ı	name	S	ıgnature		Em	p #
Cal Due	Cal Due	Cal	Due_										
Bkg	Bkg					RCT							
Efficiency _		Effici	ency	 			Print i	name	S	ıgnature		Em	p #
MDA	MDA	MD	<u> </u>										
Point	Location/Description		Remo		rect	RESULT Point		cation/Desc	cription	Remo	ovable	Dıı	rec
#	(Results in DPM/100CM ²)		Alpha	 		1 1		sults in DPM/		Alpha	Beta	Alpha	Be
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2			igsqcup			22							
			1 1			l I							_
3					-	23							
4						24							
5						24 25							
4 5 6						24 25 26							
4 5 6 7						24 25 26 27							
4 5 6 7 8						24 25 26 27 28							
4 5 6 7 8 9						24 25 26 27							
4 5 6 7 8						24 25 26 27 28 29							
4 5 6 7 8 9						24 25 26 27 28 29 30							
4 5 6 7 8 9 10						24 25 26 27 28 29 30 31							
4 5 6 7 8 9 10 11 12						24 25 26 27 28 29 30 31 32							
4 5 6 7 8 9 10 11 12						24 25 26 27 28 29 30 31 32 33							
4 5 6 7 8 9 10 11 12 13 14 15 16						24 25 26 27 28 29 30 31 32 33 34 35 36							
4 5 6 7 8 9 10 11 12 13 14 15 16 17						24 25 26 27 28 29 30 31 32 33 34 35 36 37							
4 5 6 7 8 9 10 11 12 13 14 15 16 17 18						24 25 26 27 28 29 30 31 32 33 34 35 36 37 38							
4 5 6 7 8 9 10 11 12 13 14 15 16 17						24 25 26 27 28 29 30 31 32 33 34 35 36 37							

	ROCKY FL	ATS ENVIRONMENTAL TECHNOLOGY SITE	
		RADIOLOGICAL SAFETY DRAWING SHOWING SURVEY POINTS	
	ING T707S (FORMER OIL AGE SHED)	NORTH WALL	
[WEST WALL	EAST WALI	L
		FLOOR	
		SOUTH WALL	
	N S	LINE DENOTES APPROXIMATE 2 METER HEIGHT CEILING	

1 3 1 6	ROCKT PLA	TS E	NVIR	ONM	ENT	AL TECHNOLOGY SITI	E		
	INSTRUMENT DAT	ſ A			.,				
_	Eberline Mfg Eberline					<u>Vey Type Contamination</u>	1		
	el Sac-4 Model Sac-4	-	del Elec		1	ing <u>T707-S</u>	Surv	ey Area	1 G
Call	ll # <u>846</u> Serial # <u>1054</u> Due <u>8-15-00</u> Cal Due <u>8-33-0</u>	Seri	ial #_3<	-3-00	Durne	non Inside Reconnaisance Level (
	$\frac{0 \ 0}{2} \text{Bkg} 0.4$	Cai Rk	1 20 00	<u></u> 3. ₹ Л	ruipo	ose <u>recommisance bever</u>			
		_ Effi	iciency =	21.019	RW	P#_ <i>N A</i>			
MDA	Efficiency 33% Efficiency 33%	30 ME)A <u>94</u>	DPM	1	e <u>4 - 20 - 00</u> Time _	1430	7	
Mfg	Eberline Mfg Eberline		<u>N</u>						
1	lel BC-4 Model BC-4	Мо							
	al #BC 833 Serial #BC 959		ıal #						
	Due 7-14-00 Cal Due 7-19-0		Due _\	\					
	Ulo com Bkg 38.0 com ciency 25% Efficiency 25%		iciency	\	RCT	Print name / Signatu		1/	A
	A 1045 dom MDA 95,900	•		<u>/^</u>		Print name / Signatu	re	/ Errhp) #
	ments Floor / Walls < 2 meter				noints				
	m ² scans, 1 minute pats and sw		See ma		_				
	8-30 unaccessible	pos	DOC IIIG	<u>p 101 10</u>	Journos				
			<u>su</u>	RVEY	RESU	LTS	-		
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
Ţ	Floor	0	-36	0	16	Wall	3	-20	24
2	Floor	0	8,	18	17	Wall	3	-12	0
	Floor	0	32	0	18	Wall	0	-24	0
4	Floor	3	8	12	19	uall	3	72	12
5	Floor	3	-24	18	20	Wall	0	4	D
6	floor	3	-44	18	21	We 11	3	8	0
	Floor	0	28	24		Wall	0	-12	42
	Floor	0	0	18	23	Wall	0	-12	30
9	Floor	0	0	12	24	Wall	3	12	30
10	Floor	0	-16	0	25	Wall	D	-36	0
11	Wall	0	-12	18	26	Wall	3	12	18
12	Wall	0	48	12	27	Wa][0	-12	6
13	Wall	0	4	24	28	see comment			
14	Wall	3	4	12	29				
5	Wall	0	20		20				
	- 1 00	upervis							

(Survey Area Pkg Page 11 of 15) **RS FORMS 07.02-01** ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points** Bldg.T707-S UNACCESSIBLE

Rev 02/00

	V=3000 AN U.S.	(Survey Area P.	kg Page 12 of 15) RS FURIVIS 07.02-01
1	ROCKYFLAT	S ENVIRONMI	ENTAL TECHNOLOGY SITE
IN	STRUMENT DATA		~
fg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination
Model Sac-4	Model Sac-4	Model Electra	Building T707-S
Serial # 846	Serial # 1054	Serial #_ (233	Location Inside Survey Area G
	Cal Due 8-23-co	Cal Due 5-11 00	Purpose Reconnaisance Level Characterization
Bkg OC CPM	Bkg 6.3 cpm	Bkg Zocpm	RWP#
Efficiency 33%	Efficiency 33%	Efficiency 20.63%	KWI #
MDA 8 2 DPM	MDA 13.9 DPM	MDA 94 DPm	Date 4-27-00 Time 1400
Mfg Eberline	Mfg <u>Eberline</u>	Mfg	
Model BC-4	Model BC-4	Model	
Serial # 959	Serial # <u>833</u>	Serial #	_
Cal Due <u>7-19-00</u>	Cal Due <u>7-14-00</u>	Cal Due	
Bkg <u>43 cpr</u>	Bkg <u>43 cem</u>	Bkg	RCT NA>
Efficiency 25%	Efficiency 25%	Efficiency	Print name / Signature / Emp #
MDA LOI 3 DPM	MDA 101 3 DPn	MDA NA	•
Comments Equip	oment Biased surv	ey points	-
1 minute pats as	nd swipes See ma	p for locations	
Z0-30	not enough equ	aipment to su	iruey

SURVEY RESULTS

Swipe #	Location\Description (Results in DPM/100cm ²)	Rema Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Remo Alpha	ovable Beta	Total Alpha
1	Elect Box	0	-16	2	16	window sil	0	4	-6
2	Elect Box	0	ટ8	0	17	window sil	O	-24	0
3	conduit	0	-16	12	18	conduit	3	8	12
4	conduitibox	0	-40	-6	19	conduit	3	4	76
5	conduct bench	0	~20	24	20	END of Survey			NA
6	bench	d	0	حا-	21	1			
7	conduit	0	-8	6	22				
8	cabinet	6	-12	12	23				
9	Shelf	0	-16	-6	24				
10	Shelf	Ò	8	12	25				
11	Shelf	0	-68	6	26				
12	Heater	0	-8	12	27				
13	J-Box	3	-52	-6	28				
14	Light	3	-12	6	29				
5	Light	0	-24	0	30	NA			

Date Reviewed. 5.200 RS Supervision:

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

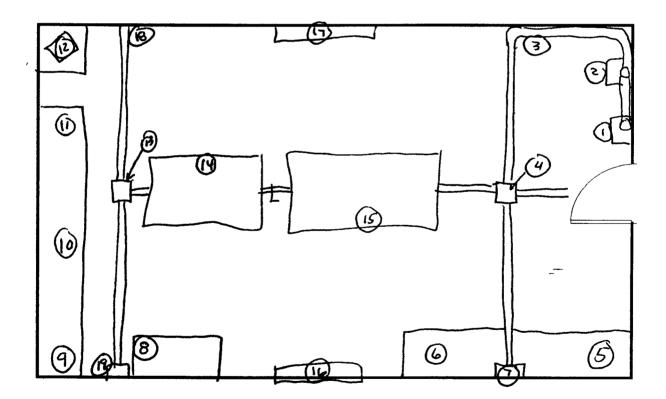
RADIOLOGICAL SAFETY

Drawing Showing Survey Points

Bldg.T707-S



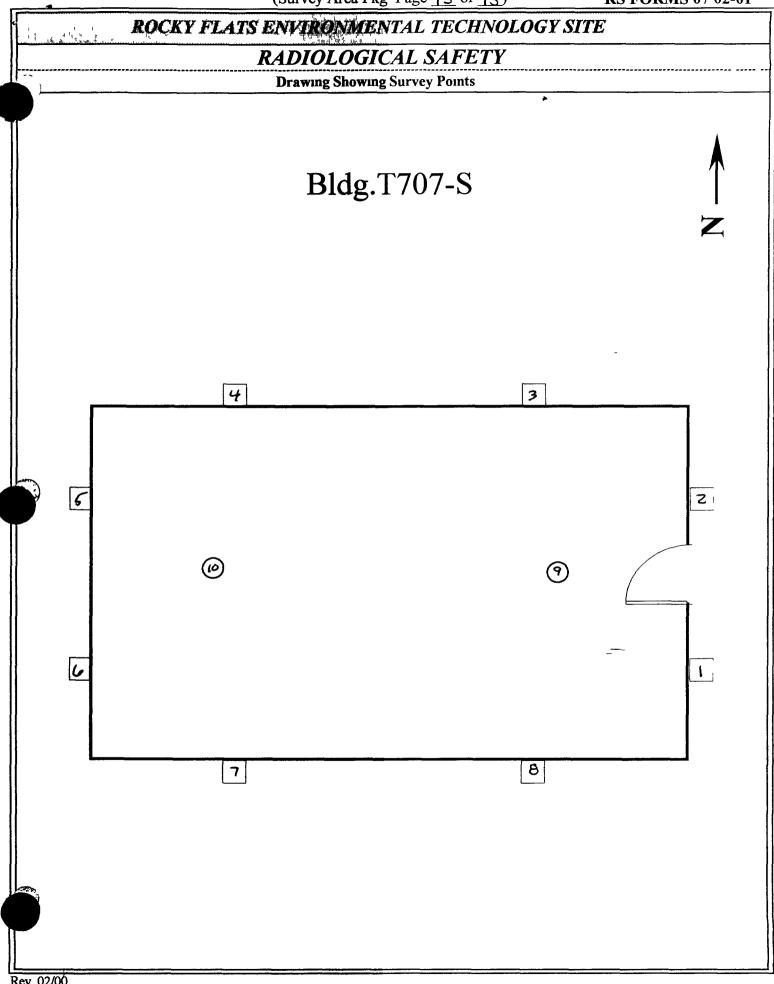




	ROCKYFILI	Property September 1972	ENTAL TECHNOLOGY SITE
IN	STRUMENT DATA		
'fg Eberline	Mfg Eberline	Mfg NeTech	Survey Type Contamination
viodel Sac-4	Model Sac-4	Model Electra	Building T707-S
Serial # 846	Serial # 1054	Serial # 1233	Location Faside Survey Area G
Cal Due 8-15-00	Cal Due <u>0-23-</u>	Cal Due 5-11-00	Purpose Reconnaisance Level Characterization
Bkg 6.0 cpm	Bkg Oiz CPm	Bkg 2,0 c?m	
Efficiency 33%	Efficiency 33%	Efficiency 20 63%	RWP# VA
<i>№005.8</i> ACIM	MDA 13.9 DPm	MDA gy DPm	Date 4-27-00 Time 1500
Mfg Eberline	Mfg Eberline	Mfg	
Model BC-4	Model BC-4	Model	
Serial # 959	Serial # 833	Serial #	
Cal Due <u>7-19-∞</u>	Cal Due 7-14-06	Cal Due	
Bkg 43 cpm	Bkg 43cpm	Bkg	RCT NA
Efficiency 25%	Efficiency 25%	Efficiency	Print name / Signature / Emp #
MDA 101 308m	MDA Jol, > DPM	MDA NA	
Comments _Ceilin	g / Walls > 2 meters	s Biased survey p	oints -
	nd swipes See ma		
		SURVEY I	RESULTS

			30	NVEI.	KESUI				
Swipe	Location\Description	Rem Alpha	ovable Beta	Total	Swipe	Location\Description	Rem Alpha	ovable Beta	Total Alpha
*	(Results in DPM/100cm ²)		 	Alpha	#	(Results in DPM/100cm ²)	Aipiia	Deta	Aiplia
<i>Y</i> 1	Wall	3	<i>-</i> 28	12	16	NA	<u> </u>		
2		٥	40	0	17				
3		0	-8	18	18				
4		0	8	18	19				
5		٥	-20	6	20				
6		6	-28	0	21				
7		Ö	-35	12	22				
8	Wall	O	8	-6	23_				
9	Ceiling	0	-28	24	24				
10	Ceiling	0	8	-12	25				
11	END OF SCIRVEY			NA	26				
12					27				
13					28		`	<u> </u>	
14					29				
5	NA							/	nιΛ

Date Reviewed 5 2-80 RS Supervision:



Rev 02/00

SURVEY PACKAGE TRACKING FORM

2	Building (707) T707S (E.	XTERIOR)
	Survey Unit. N/A	
Release Date	Validation Date	Closure Date
M 3/10/00	do 4/26/00	d 4/26/00
1		
		,
	Release Date	Survey Unit. N/A Release Date Validation Date

INITIAL SURVEY PACKAGE DESIGN FORM

Package ID: 2000-0002		Building (707)	Γ707S (INTER)	Type 1					
Survey Area H		Survey Unit · N/A	Ī	Area (m²) ~20					
Survey Unit Desc RADIOLOGICA		IOR/ROOF OF T	1707S (STORAGE SHED) NOT						
Survey Type			Classification						
RLC Survey X	FSS □		Class 1 □ Class 2 □ Class 3 □ Unknown X						
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans				
30	0	0	0	0	30				
Building.		Туре.		Survey Area					
Survey Unit			Area (m²)						
Survey Unit Description				,					
Survey Type			Classification						
RLC Survey □ FSS □			Class 1 □ Class	2 □ Class 3 □ U	J nknown □				
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans				
Building.		Туре	Survey Area						
Survey Unit			Area (m²)						
Survey Unit Desc	cription								
Survey Type.			Classification						
RLC Survey □	FSS 🗆		Class 1 □ Class	2 □ Class 3 □ U	Jnknown □				
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans				
Building Type			Survey Area						
Survey Unit			Area (m²)						
Survey Unit Desc	cription								
Survey Type			Classification						
RLC Survey □	FSS □		Class 1 □ Class	2 □ Class 3 □ U	Jnknown □				
Random/Uniform Surface Activity Measurements	Biased Surface Activity Measurements	Equipment Surface Activity Measurements	Media Samples	Volumetric Samples	Surface Activity Scans				

SURVEY PACKAGE COVER SHEET

Package ID: 2000-0002	Building: (707) T707S (EXTERIOR/ROOF)
Survey Area: H	Survey Unit: N/A
Survey Unit Description: EXTERIOR/ROOF OF RADIOLOGICALLY POSTED	F T707S (STORAGE SHED) NOT
Building Information:	
Survey Type Reconnaissance Level Characterization S	urvey X Final Status Survey 🗆
Building Type Type 1 X Type 2 🗖 Type 3 🗖	
Classification Class 1 🗆 Class 2 🗆 Class 3 🗖 Ur	ıknown X
Contaminants of Concern Plutonium X Uranium X C	Other 🗆
Justification for Classification: N/A	
Special Support Requirements: Ladder, manlinstrumentation may be required for access into	
Special Safety Precautions: Access to roofs/st controls, and/or security requirements Make as surveys on roofs or similar structures Review I	opropriate notifications prior to commencing
Isolation Controls:	
Level 1 Level 2 N/A X	
Labeling Requirements: NONE	
Survey Package Implementation:	
	. /
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	rie /
	I/A
	3/8/cv
	1te
	4-26-00
	ate I/A
	ate ,
	4/26/00
	(te

Package ID: 2000	-0002	Building (707) T707S (EXTERIOR/ROOF)					
Survey Area: H		Survey Unit N/A					
Survey Unit Description. EXTERIOR/ROOF RADIOLOGICALLY POSTED		F OF T707S (STORAGE SHED) NOT					
	Minimum Survey/Samplin	Measurement Require	ements				
Measurement	Number and Type		Comments				
Surface Activity Measurements	ROOF/EXTERIOR WALLS 30 uniformly distributed survey point EXTERIOR/ROOF of T707S - 5 survey points per wall - 10 survey points on roof NO biased survey points will be required the small size of this structure and are overlap with uniformly distributed p	SEE NOTE SEE NOTE or red due to incipated	2				

Package ID. 2000-0002	Building (707) T707S (EXTERIOR/ROOF)				
Survey Area: H	Survey Unit N/A				
Survey Unit Description EXTERIOR/ROOF OF RADIOLOGICALLY POSTED	T707S (STORAGE SHED) NOT				

	Minimum Survey/Sampling Measurement Requirements									
Measurement	Number and Type	Comments								
Surface Scanning	ROOF/WALLS 30 1 m² surface scans shall be taken at each location identified for surface activity measurements Highest locations found above the DCGL shall be documented	SEE NOTE 1 SEE NOTE 2 SEE NOTE 3 SEE NOTE 4								
Media Samples	NONE									
Volumetric Samples	NONE									
Isotopic Gamma Scans	NONE									

Package ID: 2000-0002	Building (707) T707S (EXTERIOR/ROOF)
Survey Area: H	Survey Unit N/A

Survey Unit Description · EXTERIOR/ROOF OF T707S (STORAGE SHED) NOT RADIOLOGICALLY POSTED

Survey/Sampling Instructions

NOTE 1 Representative surveys of the area will be taken in accordance with 3-PRO-165-RSP-07 02, "Contamination Monitoring Requirements", for the following

- Direct alpha contamination
- Removable alpha contamination
- Removable beta contamination
- 1m² scan measurements for alpha contamination

(Direct and scan measurements for beta contamination will not be taken unless otherwise directed by Radiological Engineering)

NOTE 2 The RCT shall document the locations of all surveys performed and maintain with the survey instructions package

NOTE 3: Areas which are posted/considered High Contamination Areas (HCA's) or Airborne Radioactivity Areas (ARA's) do not require Reconnaissance Level Characterization (RLC) surveys and may be skipped

NOTE 4 Surveys in some areas may be difficult to obtain due to height and/or access limitations RCT's shall utilize best judgement as to safely accessing these areas Survey those areas that are readily accessible through reach tools, ladders, scaffolding and/or lift systems and where proper training has been received

Package ID. 2000-0002	Building (707) T707S EXTERIOR				
Survey Area: H	Survey Unit N/A				
Survey Unit Description · EXTERIOR OF BUILD NOT RADIOLOGICALLY POSTED	LDING T707S (FORMER OIL STORAGE SHED)				
Survey/Sampling Instructions					

SUPPLEMENTAL INSTRUCTIONS

- 1 Both positive and negative measurement values for removable and fixed contamination shall be documented on the survey forms "Less than" values will not be recorded unless otherwise directed by Radiological Engineering
- 2 Survey results determined to be above the surface contamination criteria of DOE 5400 5 shall be documented and noted on the survey forms and controlled in accordance with current radiological safety practices. In addition to supervisory notification, RCTs or RCT supervision shall notify the characterization Radiological Engineer or the Characterization Project Manager. Where permitted by facility management, the location of all elevated readings shall be physically marked on the surface being measured unless the specific survey point location can be identified through use of survey maps/diagrams/photos
- 3 If during the performance of $1m^2$ scan surveys a significant instrument response (e.g., elevated reading) is noted, the RCT shall pause and obtain a one minute PAT measurement at that location. The highest "elevated reading" PAT measurement found in the $1m^2$ scan area will be documented. Swipe measurements will be collected at the elevated reading location as well
- 4 If during the performance of $1m^2$ scan surveys a significant instrument response (e.g., elevated reading) is not noted, fixed (PAT) measurements and swipes will be taken from the lower left hand corner of the $1m^2$ scan area to maintain consistency in sample point locations
- 5 Elevated survey results obtained in areas <u>without</u> suspected contamination (i.e., non-radiological areas, and radiological buffer areas) <u>AND</u> thought to be due to radon progeny shall be held for decay for a minimum of 20 minutes after the initial count and recounted in accordance with the guidance provided in 3-PRO-165-RSP-07 02 Each recount shall be documented separately and the physical surface marked as specified in item 3 above
- 6 Due to potential impacts from beta-gamma emitters in some specified survey areas, direct and scan beta measurements will NOT be taken unless otherwise directed by Radiological Engineering Survey forms shall be marked "N/A" where beta measurements are not collected
- 7 Where not already indicated assure that the following are written on the survey area diagram/photographic map/survey map
- Building number
- Geographical direction (e.g., indicate which direction is North)
- Other appropriate information (e.g., "typical" for diagrams or photos used generically, or a specific equipment identification number, where available and appropriate)
- 8 When documenting the surveys on the appropriate form(s), use the following coding in addition to other appropriate information in describing each survey point
 - (F) = floors
 - (<2m) = walls less than 2 meters
 - (>2m) = walls greater than 2 meters
 - (C) = ceilings
 - (E) = equipment (which includes overhead piping, ductwork, electrical panels, etc.)



SURVEY PACKAGE CORRECTION/CHANGE HISTORY FORM

Package ID: 2		Building (707) T707S (EXTERIOR/ROOF) Survey Unit N/A						
Survey Area:	H							
Change #	Description		Initiator/ Date	PRE				
ı	REPLACED PAGE 10 WITH	ilevised pase	do 4/26/00	1904				
2	REPLACED PAGE II WITH RE	VISED PAGE	dr 4/26/00	LOOM				

SURVEY PACKAGE VALIDATION CHECKLIST FORM

Package ID 2000-0002	Building (707) T707S (EXTERIOR/ROOF)					
Survey Area: H	Survey Unit N/A					
Survey Type: Reconnaissance Level Characterization	on Survey X Final Status Surve	еу 🗆				
All Documentation Reviewed for Completion	RCT Supervisor	PRE				
Scan Surveys	S	b				
Total Activity Surveys	S	do				
Exposure Rate Surveys	NA	NA				
Removable Surveys	<u></u>	do				
Media Samples	NA	NA				
Volumetric Samples	JA	NA				
All Surveys and Samples Accounted For	RCT Supervisor	PRE				
Scan Surveys	4	d-				
Total Activity Surveys	1	d-				
Exposure Rate Surveys	NA	NA				
Removable Surveys	1	15-				
Media Samples	114	NA				
Volumetric Samples	NA	NA				
Comments						
		4-17 00 Date				
		4-26-00				
		Date				
		4/26/00 Date				

RS FORMS 07.02-01 **ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE** INSTRUMENT DATA Contamination ¹fg Eberline Mfg **Survey Type** Eberline Mfg NeTech T707-S nodel Sac-4 Model Sac-4 Model Electra Building Roof - Wall Survey Area H Serial # 846 Serial # 6 /270 Location Serial # 1233 Reconnaisance Level Characterization Cal Due 8-15-00 Cal Due 4-12-00 Purpose Cal Due 5-11-00 Bkg Olcpm Bkg O.Z cpm Bkg Zocpm RWP# Efficiency_33%_ Efficiency 33% Efficiency 20,63% MDA 1150Pm MDA 129 DPm MDA 94 DPM 4-5-00 1500 Date Time Mfg Eberline Mfg Eberline Mfg Model BC-4 Model BC-4 Model Serial # 872 Serial # 833 Serial # Cal Due 4-12.00 Cal Due 7-14-00 Cal Due Bkg 40 cpm Bkg 41 cpm Bkg RCT Efficiency 25% Efficiency 25% Efficiency Print name Signature / Emp # MDA 98 1 0Pm MDA 99.2 DPm MDA Comments Roof / Exterior Walls Z meters Unbiased survey points 1 m² scans, 1 minute pats and swipes See map for locations **SURVEY RESULTS**

	SURVET RESULTS								
Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha	Swipe #	Location\Description (Results in DPM/100cm ²)	Rem Alpha	ovable Beta	Total Alpha
<u>1</u>	Wall	0	20	30	16	Wall	0	-12	ව
2	Wall	0	-58	36	17	Wall	3	-8	اک
3	Wall	0	12	18	18	Wall	3	-20	24
4	Wall	0	0	12	19	Wall	0	8	0
5	Wall	3	-24	24	20	Wall	3	-8	36
6	wall	0	-24	٥	21	Roof	0	8	30
7	Wall	0	28	12	22	Roof	0	4	60
8	Wall	೦	-24	30	23	Roof	0	12	60
9	Wall	3	9	36	24	Roof	3	3٤	48
10	Wall	0	Ø	30	25	Roof	0	-16	36
11	Wall	0	40	24	26	Rost	3	24	54
12	Wall	0	24	24	27	R∞f	0	-4	6
13	Wall	O	-8	30	28	Rocf	0	φ,	12
14	Wall	15	-12	24	29	Roof	0	8	24
5	Wall	∂	28	24	30	Roof	15	-4	78

Date Reviewed. 4-17 00 RS Supervision

Rev 02/00

- 3		ROCKY			Ç YA	RO.	W.	ENI	'AL TECI	INOLO	GY SIT	E'	1			
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fg		Mfg	Mfg						vey Type							
Mode		Model		lel_				Buıl	dıng							
Serial		Serial#	Seri	_					ation		1.01					
Cal D		Cal Due		Due_				Purp	ose Recon	naisance L	evel Cha	ıracter	ızatıc	n		
Bkg .		Bkg						D	D !!							
Efficie	ency			ency				RW:	P#							
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oint	Lo	ocation/Description		Remo	ovable	D11	rect	Point) Lo	cation/Desc	rıptıon		Remo	vable	Dıı	rect
#	(Re	esults in DPM/100CM ²)		Alpha	Beta	Alpha	Beta	#	\ (Re	esults in DPM/1	00CM ²)		Alpha	Beta	Alpha	Beta
1								21								
2								22								
3								23	<u></u>							
4								24								
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Date 1	Reviewed		RS Supe	rvisio	n.		I	Print	Name	/	Sign	atura			/ Em	p #

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE RADIOLOGICAL SAFETY **Drawing Showing Survey Points** Bldg.T707-S 18 20 17 19 23) (22 (21) (24) 15 14 Z 25 13 30 12 11 (26) 27 (28) 10 8 7

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ROCKY	FLATS ENVIRONMENTAL TECHNOLOGY SITE
	RADIOLOGICAL SAFETY DRAWING SHOWING SURVEY POINTS
BUILDING T707S EXTE	RIOR GE SHED)
	NORTH WALL EXTERIOR
WEST WALL EXTERIOR	EAST WALL EXTERIOR
	ROOF
	SOUTH WALL EXTERIOR

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